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HALF-YEARLY ABSTRACT  
OF THE  
MEDICAL SCIENCES.  
JULY—DECEMBER,  
1847.

# LIST OF BRITISH AND FOREIGN PERIODICALS REFERRED TO IN THE "HALF-YEARLY ABSTRACT."

## BRITISH.

*British and Foreign Medical Review.*  
*Medico-Chirurgical Review.*  
 " *Transactions.*  
*Transactions of the Provincial Medical Association.*  
*Edinburgh Medical and Surgical Journal.*  
*London and Edinburgh Monthly Journal.*  
*Dublin Quarterly Journal of the Medical Sciences.*  
*Lancet.*  
*Medical Gazette.*  
*Provincial Medical Journal.*  
*Medical Times.*  
*Dublin Medical Press.*  
*Bell's Pharmaceutical Journal.*  
*Guy's Hospital Reports.*  
*Chemical Gazette.*  
*Chemist.*

## AMERICAN.

*American Journal of the Medical Sciences.*  
 " *of Science and Art.*  
*Philadelphia Medical Examiner.*  
*New York Journal of Medicine.*  
*Boston Medical and Surgical Journal.*  
*Southern Medical and Surgical Journal.*  
*British American Journal of Medical Science.*

## FRENCH.

*Annales de Chirurgie.*  
 " *d'Hygiène.*  
 " *de Chimie et de Pharmacie.*  
 " *des Maladies de la Peau.*  
*Archives Générales de Médecine.*  
*Bulletin des Académies.*  
*Encyclographe Médicale.*  
 " *des Sciences Médicales.*  
*Journal des Connaissances Médico-Chirurgicales.*  
*Gazette des Hôpitaux.*  
 " *Médicale.*  
*Journal de Chirurgie de M. Malgaigne.*  
*Revue Médicale.*  
*Journal de Chimie Médicale.*  
*Journal de Chimie et de Pharmacie.*

## GERMAN.

*Schmidt's Jahrbücher.*  
*Zeitschrift für de Gesammte Medicin.*  
*Muller's Archiv für Anatomie, &c.*  
*Liebig's Annalen der Chemie und Pharmacie.*  
*Canstatt's Jahresbericht.*  
*Buchner's Repertorium.*  
*Haller's Archives für Physiolog. und Patholog. Chemie.*  
*Casper's Wochenschrift.*  
*Poggendorf's Annalen.*

N. B.—Every periodical here specified is consulted *directly* by the Editor and his coadjutors.

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THE  
HALF-YEARLY ABSTRACT  
OF THE  
MEDICAL SCIENCES:

BEING

A PRACTICAL AND ANALYTICAL DIGEST OF THE CONTENTS OF THE PRINCIPAL  
BRITISH AND CONTINENTAL MEDICAL WORKS PUBLISHED  
IN THE PRECEDING SIX MONTHS.

TOGETHER WITH

A SERIES OF CRITICAL REPORTS ON THE PROGRESS OF MEDICINE AND THE  
COLLATERAL SCIENCES DURING THE SAME PERIOD.

EDITED BY

W. H. RANKING, M.D., CANTAB.,

LATE PHYSICIAN TO THE SUFFOLK GENERAL HOSPITAL.

Apparata nobis opus est, et rebus exquisitis undique et collectis, arcessitis, comportatis.—CICERO.

VOL. VI.

JULY—DECEMBER, 1847.

PHILADELPHIA:  
LINDSAY AND BLAKISTON.

1848.

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*The Editor is again compelled to remind his American correspondents that no parcels are taken in unless the entire charge is paid upon them.*

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# ABSTRACT OF THE MEDICAL SCIENCES,

&c. &c.

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## PART I.

### PRACTICAL MEDICINE, PATHOLOGY AND THERAPEUTICS.

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#### SECTION I.—ZYMOTIC DISEASES.

ART. 1.—*On the Treatment of Fever by Cold Water.*

By WILLIAM GILL, M. D., Physician to the Nottingham Dispensary, &c.

(*Prov. Med. and Surg. Journal*, Sept. 22.)

[In our last volume, p. 3, the reader will find a communication by Mr. Stallard, of Leicester, upon the efficacy of the external application of cold water as a refrigerant and sudorific in fever; we continue the subject by the following abstract of a paper which was read at the last meeting of the Provincial Medical and Surgical Association.]

Before entering more immediately on the object of this paper, the author describes concisely the general features of the prevalent fever. In most cases the *immediate* cause of the attack was traceable to sleeping in crowded lodging-houses, the usual abode of fever in large cities; the proximate causes, doubtless, were over-fatigue, and insufficient and unwholesome food. The term "hunger pestilence" has been aptly applied to the disease. A true typhoid gastro-enteritis was present in many of the patients, closely resembling what so frequently is observed in the Parisian hospitals. Whether the essentiality of the fever existed in the condition of the muco-alimentary membrane or not, it was not the author's intention to discuss. This, however, he remarked, that *so soon* as the signs of gastro-alimentary irritation were subdued, the signs of general fever subsided. Some two or three cases, which he read, corroborate this observation. In the generality of patients under his care, not only was the gastro-alimentary membrane affected, but also the muco-pulmonary, as evidenced by cough, shortness of respiration, and frequently universal sonorous râles, affecting the whole of the chest. In most of the Irish sick, the skin was spotted with petechiæ, of different sizes and colours, chiefly developed on the abdomen and chest. This was not remarked amongst the English cases. There was no discharge of blood from the inner membranes. Edema of the lower extremities occurring early in the disease was generally a fatal symptom, though we had two cases of recovery in boys, who were universally anasarcaous from the commencement. The disturbance of the sensorium was marked by low muttering delirium, sometimes wandering about the bedroom, constant picking at the bedclothes, and subsultus tendinum. Some were affected with a heavy, comatose, and stupid state, from which they were with difficulty aroused, and when aroused, with difficulty were made to understand questions; they relapsed immediately into the same lethargic condition when left to themselves. This comatose condition often continued till convalescence was established, and in some even later. It seemed a perfect prostration of all mental

energy, and was only relieved as the bodily powers regained their tone. In no one case did active delirium occur. The secretions from the bowels were thin, frequent, black, and offensive, and often attended with severe griping, but no bloody discharges. The function of the bladder in one or two individuals was suspended, and it was necessary twice daily to use the catheter. The usual period of the termination of the fever seemed to be from the eighteenth to the twenty-first day, at which time the patients were left in a state of the greatest prostration. When the case terminated fatally, an unrousable, unconscious coma closed the scene. The usual symptoms of fever were generally present,—as the hot dry skin, black tongue, urgent thirst, pulse varying from 90 to 130, insomnia, and pains in head, back, and limbs, &c. After this brief description of the general features of the disease, he proceeds to the treatment.

He remarks that he is well aware that a great prejudice exists in the profession against the treatment to be advocated, partly because it is opposed to preconceived opinions, and chiefly from the unprofessional manner in which it has been ushered into notice. Feeling certain, however, that he was addressing a body of gentlemen willing to receive *truth* for the *sake of itself*, he, with perfect confidence, detailed a treatment of fever as yet untaught in the schools, and generally unrecognized by the profession.

Dr. Currie, of Liverpool, was the first scientific English physician who enlisted cold water as an external remedial agent in the treatment of fevers. Successful as the practice was under his direction, it has been little followed in later times. It is only within the last few years that the prejudice which existed against the internal and external use of water has begun to subside. "Perhaps," observes the author, "the prominence of the sanitary questions, and the many evils proved to arise from the want of a due supply of pure water, has had much to do in removing this groundless prejudice, and may have produced an undue reaction in its favour, causing it to be considered *not only* as necessary to a healthy condition, but as a *curative agent* of universal efficacy. Hence, perhaps, the public mind has been somewhat prepared to receive the hydropathic theory with much more favour than its intrinsic merits demand. An universal remedy will ever find many advocates, and, in a numerous profession like ours, there are ever men to be found who, from selfish motives, will pander to this diseased taste of the public mind. We, as an association, must ever protest against such exclusive theories as prevail in our days, being in our opinion unscientific, opposed to experience, and calculated to lead to incorrect views respecting the power of many known and valued medicinal agents. In making this protest against any exclusive theory for the cure of diseases, we must not rush into the opposite extreme, and, from disbelief of their universal efficacy, deny their particular efficacy, when the touchstone of experience speaks to the contrary."

The plan the author has adopted for the cure of fever, has been a modification of Dr. Currie's. Instead of pouring buckets of cold water over the body, he has it enveloped in a wetted sheet, an instrument more effective than Currie's in reducing the temperature of the body, and producing a warm and comfortable perspiration, which did not uniformly follow his plan. The fear of evil consequences from this treatment is groundless. He gives no opinion as to its utility, except in cases of fever. Here, however, he states that he can speak with confidence. When the skin is burning hot, and the mouth and tongue parched, the application of a sheet wrung out of cold water, and applied *closely* to the whole surface of the body, and evaporation prevented by the application of three or four blankets placed over it, produces a most grateful feeling of refreshment, which is soon followed by a more or less warm perspiration. In young people, this perspiration breaks out in from five to ten minutes after its application; in middle-aged people the period is longer. Many uncomfortable sensations are soon relieved by its use; such as the muscular pains in the back, thighs and legs, and the sense of aching and weariness; the thirst often becomes less, and even the dry tongue sympathises with the relaxing influence induced on the cutaneous surface. He has seen the low moaning delirium subside whilst under its use; and some patients, who have not slept before, doze, especially if the hair has previously been cut short, and a flannel nightcap, wetted with vinegar and water, been applied to the head.

The simple plan he has followed has been this:—On a flock-bed he has placed

from three to five blankets; superimposed over these, a sheet wrung out of cold water, on which the patient, stripped, is placed, with legs outstretched, and arms to the side; the sheet is then drawn tightly around, up to the neck, and inclosing the feet; first, one blanket, then another, and so on to the whole number, are tightly drawn over the sheet, so as to have the *whole body well and closely packed*. In this state, the patient lies from a quarter of an hour to one or two hours, according to the object in view, and the effect produced. Some get tired at the end of half an hour, some can continue for one or two hours, and feel very comfortable. As soon as a gentle perspiration commences, a wineglassful of water is given frequently. At the commencement of this treatment, in a case of fever, he has generally ordered its use for one hour; after that time the wet things are removed, and the sick person is placed in bed, well wrapped in three blankets, and allowed to perspire for three hours; afterwards, the blankets are to be carefully removed, one at a time, so as to allow the perspiration to subside gradually, and the patient is then placed in bed, between the sheets.

During the whole of this period, small quantities of water should be given. In the summer, during this process, a free ventilation may be allowed in the chamber, in winter it is necessary to have a good fire, and to have one blanket well warmed, to apply around the body, so soon as removed from the wet sheet.

Several cases of incipient fever have lost all traces of disease after the first application. If the fever be not reduced, the next day the same plan must be repeated, keeping the patient in the wetted sheet from half an hour to one hour, according to the intensity of the symptoms, and in the blankets from one to two hours. This may be repeated every day till indications of a *cool skin* arise, then it must be immediately discontinued.

During some period of this treatment, the temperature of the atmosphere being very high, (75° to 78° in shade,) the author has not found it advisable to keep the patient as long as two hours sweating in the blankets; from half an hour to one hour was sufficient. A longer period caused the pulse to be accelerated instead of lowered, which latter is the usual effect of the treatment. In very hot weather, when a free perspiration has been induced at the commencement of the fever, he has adopted the following plan. To wrap the sick person for half an hour in the wet sheet, covered lightly with one blanket; to be then washed all over with a towel wetted with tepid water, then rubbed dry, and placed in bed between the sheets. He has not found it necessary to make use of this treatment more than five times to the same individual; generally, after the third or fourth application, the skin becomes cooler, and the other signs of fever gradually subside. When the skin becomes cool, and the tongue less dry, he has instantly discontinued all water remedies, and given bark, wine and broths, and it was surprising how soon convalescence and strength became established. During the whole course of the fever, milk and water, or weak broths, were allowed *ad libitum*. In one person, twice in the course of the same day, owing to the intensity of the fever, it was found necessary to repeat the wet sheet, using it the second time for only half the period of the first; a comfortable night ensued.

Without doubt, this is a most effective mode of *quickly* reducing the temperature of the body; an equilibrium is soon established between the cold of the water and the heat of the body, and the patient becomes bathed in a natural vapour-bath, as may be felt by placing the hand under the bedclothes. Where the fever runs high, and the delirium is violent, the wet sheet may be safely applied for short periods (two minutes), several times in the course of the day. This will be found a more effectual mode of reducing the cerebral excitement, than any other means with which we are acquainted. This refrigerating plan, used for ten minutes, during an evening exacerbation, will often produce a few hours' refreshing sleep.

The author confesses that he had, at first, great doubts as to the *safety* of this treatment, where the mucous membranes of the bronchi and gastro-alimentary passages were complicated. Very soon his fears on this head were dissipated by the convincing evidence of experience; in fact, *these* proved the cases in which the decided benefit of the treatment was most marked. The quick and embarrassed respiration, dry cough, and sonorous râles, subsided quickly after one or two applications of the wet sheet; the cough became looser, the râles moister, and expectoration was established.



The same happy change also occurred where the gastro-alimentary membranes were disordered. Generally, the first wet sheet puts a stop to the diarrhœa, and soon afterwards, pain and swelling disappeared. A confined state of the bowels was frequently the effect of the wet sheet, and it was found necessary, in several of the patients, to resort to small doses of castor oil. In three or four cases, the symptoms of gastric and abdominal irritation or inflammation were so violent as to have justified the employment of leeches, calomel, and opium; and, indeed, we know that depletion by leeches is the usual treatment followed in the Parisian hospitals, and yet by the simple means mentioned, in three days every bad symptom had vanished. A great saving is made to the patient's strength, when we can dispense with the abstraction of blood.

As the author is anxious to make this paper altogether practical, he does not enter into any theory respecting the *modus operandi* of the wet sheet.

The following selection of cases was read:

CASE I. Michael Kane, aged 18, Irish vagrant, of vigorous constitution. He has been in the Union Hospital five days, under the care of Mr. Stiff, and taken salines.

June 28th. The following is his present condition:—Supination in a lethargic state, and unconscious, unless violently aroused; the face purplish red; eyes bloodshot and pupil dilated; constantly picks at the bedclothes; subsultus tendinum; low muttering delirium; the skin furnace-hot; tongue dry, shrivelled, black, and covered with sordes; diarrhœa; general tympanitis of abdomen, without much expression of pain when pressed, unless aroused, and then his face indicates the existence of pain; the urine and stools are not passed involuntarily; the abdomen and skin generally covered with dark-coloured petechiæ; the respiration hurried, forty-four in the minute, and the stethoscope reveals universal bronchitic râles in the chest; pulse 130, weak and hurried. The treatment ordered was the application of the wetted sheet for one hour, blanket for two hours; the head to be shaved, and a flannel night-cap, wetted with vinegar and water, to be constantly applied. To have milk and water *ad libitum*.

There evidently were clear signs of head, chest, and abdomen complication. The bloodshot eye and purple countenance, accompanying a nearly unconscious state, indicated a congestive condition of the brain. The stethoscope revealed a similar condition in the lungs, and the universal swelling of the abdomen, attended by diarrhœa, and by pain when the patient was partly sensible, added no little to cause a most unfavourable prognosis to be formed.

June 29th. The aspect is better; has passed a better night; the picking at the bedclothes and the low muttering delirium are quite subsided; the skin is cooler and rather inclined to moisture: the purging no longer continues, and there is less tympanitis; breathing and dry cough less troublesome; respiration not so frequent when lying quiet, but the slightest movement causes it to be accelerated; the râles moister: the man more intelligent when aroused, but still instantly falls into a doze when left to him-self: the tongue not so black or dry; the pulse come down to 100, regular and soft. He sweated much both in the sheet and blankets. To repeat the wet sheet and blankets as before.

30th. Continues better in all respects. No further application of the wet sheet.

July 1st. The man is convalescent; skin cool and moist; tongue has nearly lost all marks of dryness and blackness; urine free and paler coloured; bowels open once daily; intelligence nearly restored; pulse 90; the chest and abdominal complications rapidly subsiding: the patient asks for nourishing diet. To have the bark, mutton broth, and bread and milk.

July 4th. To have meat daily.

5th. Is able to walk in the room.

6th. Is down stairs in the yard, and well.

CASE II. Martin Glynn, Irish vagrant, aged 13, has been ill three days.

June 9th. There is intense heat of skin, and flushing of the face, with pains in the head, bones, abdomen, back, and legs; great thirst; tongue deep red, and covered in the centre with a cream-coloured fur; great pain in epigastrium, and a tympanitic condition of the abdomen, with diarrhœa; there exists slight cough, but no râles in the chest; the tongue is tremulous and subsultus tendinum is present; no sleep; pulse 110, rather sharp; urine scanty, and high coloured.

To have the wet sheet for one hour, and blankets for three hours. Milk and water to drink. The abdominal complication was most marked in this case—a *true typhoid gastro-enterite*.

10th. Continues in many respects the same; the diarrhœa, however, has subsided. Was ordered a repetition of the treatment, and the vinegar-and-water lotion to the head.

11th. Says he is better to-day; the skin is cooler, and inclined to moisture; face very little flushed; tongue becoming less dry and red; headache better; no pain in epigastrium or abdomen; bowels confined; urine free and paler; less thirst; pulse 110, but not so sharp. To repeat the wet sheet as before.

12th. Convalescent; slept the whole of the night, and makes no complaint this morning, except of weakness. Face cool; headache gone; tongue clean and moist; urine free; pulse 64, very soft; appetite returning. To have mutton broth and bread and milk.

13th. To have rice pudding and meat.

16th. Is able to walk in the yard, and may be considered well.

CASE III. Thomas Gafen, Irish, aged 14, of healthy habits, ill for three days.

July 8th. Face flushed and anxious; skin very dry and hot; tongue of a vivid red, and in the centre covered with a dirty cream-coloured fur, becoming dry and black in places; great thirst; throbbing pain in the head, epigastrium, and limbs; pulse 120, wiry, and small; considerable tenderness in epigastrium; gurgling in iliac region, accompanied with diarrhœa; the respiration hurried; frequent cough, and universal sonorous râles in the chest; no sleep, urine scanty. Was ordered the wetted sheet for one hour, and blankets for two hours. Hair to be cut short, and the wetted cap applied. Milk and water to drink.

9th. Continues in all respects the same, except that the skin is somewhat cooler.

10th. Wonderfully better; slept much in the night; aspect natural; no heat of face or skin, which is inclined to moisture; tongue moist, and losing its fur; very slight thirst; urine free; bowels open twice since the 10th, and has lost all pains in the head and epigastrium; pulse 76, soft. No further application was ordered.

On the 14th the boy was allowed to sit up, and have meat, and was considered convalescent.

In conclusion, the author inquires whether we may not draw the following conclusion from the facts brought forward:

1. That the judicious use of the wet sheet has a powerful influence in relieving many of the most distressing symptoms of fever.

2. That if applied *very early* in the disease, it may in some cases arrest its further progress.

3. That if used *later* in the disease it has a controlling influence, bringing the fever to a termination much earlier than by any other known treatment.

4. That the ordinary *complications* of fever are no arguments against, but rather for its use.

5. That with this treatment, weak broths and milk and water, *ad libitum*, may be allowed.

6. That the first symptoms of the subsidence of the fever, were a cool and often moist condition of the skin, a diminution of thirst, and an improvement of the tongue. When these changes occur, the treatment must directly be discontinued, and bark and better diet be ordered.

7. That some of the worst cases of typhus fever were convalescent, and walking about on the fifteenth day from the commencement of the attack.

[We may further observe that, at the Newton Branch Meeting of the Provincial Association, reported in the same number of the Journal, Mr. Burrows related the results of his experience of the above mode of treating fever.]

He commences by clearing the *primæ viæ*. If the skin remained hot and dry, the mental faculties dull and cloudy, the limbs painful and weary, he ordered his patients to be stripped and enveloped in a sheet wrung out of cold water, and closely wrapped in thick blankets. This application was continued forty minutes, or more, according to the effect produced. During the interval warm diluents were freely administered, and when a copious perspiration ensued, the wrappings were removed, and the patient covered with the ordinary bedclothes. When the

patient exhibited all the symptoms of "famine fever," viz., cold skin, feeble pulse, &c., he modified the treatment by wringing the sheet out of very hot water, and covering the patient as before, and at the same time gave hot negus and acetate of ammonia. When sweating was induced it was maintained by placing a hot brick wrapped in flannel at the feet. The patients invariably expressed themselves relieved by this treatment, and some continued to convalesce from that period; others had a marked crisis on the eleventh to the fourteenth day. Mr. Burrows states that he feels convinced that, applied during the initiatory stage of fever, the wet sheet, with purgative and diaphoretic medicines, has prevented the further development of febrile action, and removed the first impression made by the poison upon the system.

ART. 2.—*The Cause, Prevention, and Treatment of Typhus Fever.*

By I. PIDDUCK, M. D.

(*Lancet*, Aug. 14.)

*The cause of typhus fever* is the exhalation of a specific poison from the bodies of the sick, by which persons in health become infected with the disease, as in cases of small-pox, measles, scarlet fever, &c.

This poison may be destroyed by a temperature of 212 deg., whether by boiling in water or by hot air; it may also be diluted by washing and ventilation, so as to be rendered inert.

*The prevention of typhus fever* consists—

1. In separating the healthy, particularly the young, from the sick.
2. In removing curtains and carpets from the room, and clothes from the person of the sick.
3. In boiling linen and cotton garments, blankets, and rugs in water, before they are washed, and in baking woollen cloth garments, which cannot be boiled, put into a sack, in an oven.
4. In washing the bodies of the sick, and the floors of rooms, with soap and water, and the walls and ceilings with lime.
5. In lighting fires in fireplaces, and setting open windows and doors.
6. In keeping provisions away from the apartment of the sick.

But as this poison exerts a much more malignant and fatal effect upon persons whose health is impaired by exposure to malarious influence, it is of great importance that putrid effluvia from drains, dunghills, or privies should be carefully obviated.

The drains from houses should be covered in, cesspools and necessaries should be emptied, stagnant ponds should be run off, and every cottage in the country should be provided with a bricked cistern, covered with a wooden flap-lid, for the reception of all solid and liquid manure, which should be emptied and carried out on the land, as soon as it is full.

If these precautions are taken, there is no need for chloride of lime or any other disinfecting agents, which only correct putrid effluvia; they have no power to destroy the poison. They are worse than useless when they lead to a false security, and occasion the neglect of these more efficient means. In like manner, drinking to excess, especially ardent spirits, eating unwholesome food, such as bad potatoes, decaying vegetables, half-rotten fruit, musty or sour meal, unsound meat, stale fish, and drinking stagnant water, should be carefully avoided. Great attention should be paid to personal and domestic cleanliness. The house should be kept dry, warm, and well ventilated.

*The treatment of typhus fever.* This is better left to the medical practitioner in the locality, who is best able to judge as to the remedies most suitable for individual cases.

The following are the principles which guide the practice in the typhus fever of London:

1. To remove all offending matters from the stomach and bowels, an emetic of salt water or ipecacuanha is administered: then a grain or two of calomel, and fifteen grains of rhubarb, followed by castor oil if necessary.

2. After the operation of the emetic and purgative, the patient is washed all over with soap and water, and put into a clean warm bed, with a fire in the room, and the window open.



3. Five grains of the chlorate of potass in a wineglassful of camphor-mixture is ordered every six hours. The chlorate of potass seems to aid the vital energies in expelling the poison, evinced in the improved colour of the skin, and altered state of the secretions.

The diet consists of bread and milk, or gruel, seasoned with salt instead of sugar, light broth, and fresh, well-boiled vegetables; whey, sago-tea, or lime-blossom tea, and oatmeal toast-water.

The body linen and flannel vest are changed daily, and the sheets once a week; the dirty linen, cotton, and flannel are put at once into cold water, and boiled before they are washed.

From this statement, it is evident that the cure of typhus fever can no more be effected by medical treatment than the cure of small-pox, measles, or scarlet fever. The disease, once set in, must run its course. It terminates, naturally, on or about the fifteenth day. The object of medical treatment, therefore, is to avert its fatal tendency; or, in other words, to conduct the patient in safety through its different stages. If the disease do not admit of cure, much may be done toward its prevention. 1. By separating the healthy from the sick. 2. By destroying or diluting the poison. 3. By avoiding all those causes which impair the health, and weaken the powers of resistance.

ART. 3.—*On the Use of the Nitrate of Silver in the Cure of Erysipelas.*

By JOHN HIGGINGBOTTOM, F.R.C.S.E. Nottingham.

(Read before the Prov. Med. and Surg. Association, at the Anniversary Meeting, at Derby, Wednesday, Aug. 4, 1847.)

The author states that he has found that if the nitrate of silver be applied *early*, it subdues local inflammation and irritation, if we employ, at the same time, the most efficient means for regulating the digestive organs.

At an early period of his practice, in slight cases of erysipelas, he used constitutional remedies alone, hoping that the inflammation would have been arrested; but having been so often disappointed, he now uses both local and constitutional remedies simultaneously, and especially the nitrate of silver. Even in mild cases of erysipelas, in which he did not apply the nitrate of silver, he found the disease very long in duration, and observed that the patients had sometimes numerous small abscesses requiring the use of the lancet, which might have been prevented altogether by the early application of the nitrate of silver.

The objections formerly entertained by him to the very early application of the nitrate of silver, were the pain and inconvenience attending the discoloration of the part on which it is applied, which remains for a week or more, but these objections are trifling compared with the continued severity of the disease, if permitted to run its usual course, particularly on the head, in which there is also great danger of inflammation of the membranes of the brain, and of serous effusion. He has found that when the inflammation has been subdued by an early use of the nitrate of silver, the constitutional symptoms were immediately relieved; the constitutional disturbance is directly aggravated by the least increase of local inflammation, and in a few hours, after a decided application of the nitrate of silver, the inflammation is arrested, and gradually subdued, and with it the constitutional symptoms cease.

Even in idiopathic erysipelas, there is no period of the disease when he would not apply the nitrate of silver, and states that he has never in any cases seen metastasis, or any other bad effect from the use of this important remedy.

When it is necessary to apply the nitrate of silver over an extensive surface, as in erysipelas, he has for some years used the concentrated solution in the manner proposed by Mr. John Gooch, Surgeon, R. N., in a paper published in the "Lancet" of September 15th, 1832, entitled "Practical Remarks on Erysipelas as it appeared on board his majesty's ship, Prince Regent." The strength of the solution is not given in this paper; he prescribes it in the following manner:

R. Argenti nitratis, scr. iv,  
Acidi nitrici, gtt. vj,  
Aquæ destillatæ, dr. iv.

[The author gives the following rules for its use:] "In erysipelas of the face, when it is spreading on the forehead, or at all on the scalp, the head should be shaved as early as possible, in order that we may trace the extent of the inflammation on the scalp, which often can only be detected by pain, or by an œdema being felt on pressure with the finger. The affected part should be well washed with soap and water to remove any oily substance from the skin, and afterwards with pure water, to wash away any particle of soap remaining. The concentrated solution may be then applied several times on the inflamed part, and for two or three inches beyond the inflamed margin on the healthy skin. It requires to be applied very freely all over the scalp, where it scarcely or never produces vesication.

"In about twelve hours it will be seen if the solution has been well applied. If any inflamed spot be unaffected by it, it must be immediately re-applied to it. Sometimes, even after the most decided application of the nitrate of silver, the inflammation may spread, but it is then generally much less severe, and it is eventually checked by the repeated application of this remedy. I have in some cases of traumatic erysipelas, found the inflammation to spread more severely, and more rapidly than in the idiopathic, but by the free repeated application of the nitrate of silver, it has at length been subdued."

The following cases are selected to illustrate this mode of treatment:

"CASE I. On the 6th of August, 1844, I visited Miss A., 20 years of age, of very delicate constitution, and of a strumous diathesis. She had been exposed to the rain, and had neglected to change her damp clothing. She experienced the common symptoms attending a cold, accompanied by a slight erysipelatous inflammation of the right side of the cheek and nose. The constitutional symptoms were so slight, and the pulse so little accelerated, that I wished to avoid the application of the nitrate of silver, thinking the inflammation might be subdued by other remedies. I directed thirty grains of ipecacuanha as an emetic, and in three hours after its operation two pills containing three grains of chloride of mercury, and eight grains of the compound extract of colocynth, followed by a purgative of salts and senna, repeated every three hours until it operated freely.

"7th. Early the following morning, although the emetic and purgative had operated satisfactorily, she was labouring under a severe attack of fever; the pulse was 140, and the erysipelas had spread considerably on her face and forehead, and slightly on her scalp. I opened a vein in the arm, and bled her in the semi-recumbent position to the amount of twelve ounces, when she became faint. Her head being shaved, the concentrated solution of the nitrate of silver was applied upon and beyond the whole of the inflamed surface, and also around the ears, to prevent them becoming inflamed. I applied it very freely over one-half of the scalp, thinking this might be sufficient, as only a small portion of the forehead was affected. I prescribed two grains of the chloride of mercury, with two of antimonial powder, every six hours.

"There appeared no increase of the inflammation on the 8th, and the pulse 120; the bowels had been well moved.

"9th. She had a restless feverish night, attended with slight delirium, the pulse being 120. There was no increase of erysipelas on the face, but it was spreading on the remaining part of the scalp. I applied the solution of the nitrate of silver over the remaining part of the scalp. Neither of the ears were in the least affected. The solution of the nitrate of silver had apparently formed a barrier, over which the erysipelas did not spread.

"On the 10th the patient was in every respect improving.

"From this time Miss A. recovered without interruption.

"CASE II. I visited Miss B., aged 30 years, on the evening of the 18th of December, 1843. She had been indisposed several weeks. There were considerable fever, a quick pulse, and pain of the head, and she had a patch of erysipelas on the upper part of the nose, and a little across the lower part of the forehead. I prescribed an emetic of ipecacuanha, followed by a dose of chloride of mercury and compound extract of colocynth, and the sulphate of magnesia in infusion of senna.

"On the morning of the 19th, the erysipelas had spread all over the face, and as high as the forehead, close to the scalp, and there was no abatement of the

constitutional symptoms. I bled her, whilst sitting up in bed, until she fainted, and directed the head to be shaved, and I then applied the solution of the nitrate of silver all over the face, and one half of the scalp. In the evening I applied the solution of the nitrate of silver over the remaining part of the scalp; having found that one ear had become inflamed, I applied the solution both upon it and around the other are affected.

"20th. The fever was considerably abated; the pulse was 100. From this day the patient was convalescent.

"CASE III. I visited Miss C., aged 20 years, on the 14th of September, 1844.

"She had a sense of coldness and pain of the limbs the day before; she had then a slight degree of erysipelas on the left side of the nose, cheek, and upper lip. I directed an emetic and pill, with the compound colocynth powder and chloride of mercury, followed by an active dose of infusion of senna and sulphate of magnesia.

"In the evening I found the erysipelas increased and spreading towards the ear; the lower eyelid was considerably swollen, but the erysipelas had not reached the forehead; pulse 100; no pain of the head. I applied the strong solution of the nitrate of silver all over the inflamed surface, and the surrounding healthy skin, for several inches, particularly round the ear. A grain and a half of chloride of mercury, with two grains of antimonial powder, were given every six hours, and a saline effervescing medicine every three hours.

"16th. The application had been effectual, and there was no increase of the erysipelas; the pulse was 80.

"CASE IV. Mr. J. S., aged 30 years, had slight febrile symptoms on the 11th of December, 1843, which arose from exposure to cold. He had taken aperients and saline medicines. Two days afterwards there was a patch of erysipelatous inflammation on the right side of the face, without any considerable increase of fever. The nitrate of silver was well applied on the inflamed part, and on the surrounding skin. There was no further extension of erysipelas.

[The author, in conclusion, thus comments upon the above cases:]

"It will be observed in the two last cases, when the nitrate of silver was promptly applied, before the erysipelas had produced severe constitutional symptoms, that the progress of the disease was instantly arrested, and that the patients speedily recovered. In the case of Miss B., although the erysipelas at first was suffered to proceed, the application of the nitrate of silver to the whole scalp prevented any cerebral affection, and the patient was convalescent in a short time. In the first case related, there were restlessness and delirium fifteen hours after the application of the nitrate of silver, but it was observed that the scalp, where the nitrate of silver had not been applied, was inflamed, and on the decided application of the nitrate of silver on the whole of the scalp, the delirium ceased. From these cases, as well as from my experience of many years, I conclude that the speedy application of the nitrate of silver will arrest the progress of erysipelas, and prevent cerebral mischief. It is also of great practical importance to subdue erysipelatous inflammation in the commencement, for I have observed, when the attacks have been severe, that the patients afterwards become more subject to a recurrence of the disease.

"The great obstacle to the general and free use of the nitrate of silver, even at the present day, appears to arise from the impression on the minds of many surgeons that it is a caustic,—a destructive agent. If they could be divested of that idea, and use it as freely as they would a common blister of cantharides, their fears would soon subside, from repeatedly observing the safety of the application, and also its beneficial effects. In my own practice I have always considered it a safer remedy than cantharides, as it may be applied freely over a surface, even where very active inflammation exists, or where there is an extensive surface denuded of its cuticle. This remedy has also the advantage of not affecting the bladder, or producing strangury.

"The nitrate of silver is not a caustic in any sense of the word. It subdues inflammation, and induces resolution and the healing process. It preserves, and does not destroy, the part to which it is applied. If we compare a caustic, as the hydrate of potassa, with the nitrate of silver, we find that the hydrate of potassa destroys and induces a slough and the ulcerative process; but if we touch a part



with the nitrate of silver, the eschar remains for a time, and then falls off, leaving the subsequent parts healed.

"If an ulcerated surface secreting pus be touched by the nitrate of silver, the succeeding discharge is immediately converted into lymph: it is the property of the hydrate of potassa, on the contrary, to induce not only ulceration but suppuration. In short, the peculiar properties of the nitrate of silver have long been kept unknown to us by the designation of lunar caustic, affording the most striking instance of the influence of a term, or of a classification, upon the human mind. The nitrate of silver and the hydrate of potassa (as indeed all caustics) are as the poles to each other, the first preserves, the second destroys; the first induces cicatrization, the second, ulceration."

ART. 4.—*Treatment of Erysipelas by Linear Blisters.*—Erysipelas is not a severe disease when it is confined to a limited part of the body; it is generally its extension, either superficially or in depth, that produces the danger. Attempts have long been made to counteract this tendency to extension by the nitrate of silver, solutions of sulphate of iron, &c. These methods have for the most part failed. M. Piorry affirms that he has discovered a means of effecting the desired limitation of inflammatory action with great certainty, by applying, at the commencement of the disease, narrow blisters around the entire circumference of the inflamed skin, at a distance of an inch or two from its border. He states, that the erysipelatous blush soon reaches the inflammation arising from the blister, but in more than twenty cases has not gone beyond it.

*Journal de Pharmacie.*

[In a case of erysipelas arising from the irritation of the throwing off a spicula of bone, consequent upon fracture of the tibia, which has recently come under our care, we endeavoured to limit the extension of the inflammation by encircling the thigh with a linear blister, as above recommended; but we feel bound to state that, although perfect vesication was induced, the erysipelatous blush was in no-wise checked in its progress.—Ed.]

ART. 5.—*Diagnosis of Scurvy and Purpura.*—In an elaborate article, which the present prevalence of scurvy has given rise to, the author, Dr. Curran, makes the following distinctions between that disease and purpura:

SCURVY.	PURPURA.
Most frequent after 18 years of age.	Most frequent between 5 and 18 years of age.
Chiefly affects males.	Females.
Gums more or less sore and spongy.	Gums bleed sometimes, are rarely sore, and never spongy.
Ecchymoses more frequent than petechiæ.	Petechiæ-like spots frequent, ecchymoses rarer.
Shades of eruption most various.	At first always dark-coloured.
Lower extremities almost exclusively affected.	All parts nearly equally.
Muscular indurations nearly always.	Never.
Hæmaturia scarcely ever.	Not infrequent.
Bloody stools very rare.	Frequent.
True hæmoptysis never.	Occasionally.
Neuralgic pains and pains in the spots invariable.	Never.
Effusions in joints frequent.	Never.
Contraction of flexor muscles frequent.	Never.
Lasts for months, if not interfered with.	Rarely lasts more than a few days.
Frequently fatal if not checked.	Scarcely ever fatal.
Always in connection with errors in diet.	None such discoverable.
Affects large numbers of individuals at the same time.	Sporadic; epidemics extremely rare.
Speedily cured by lemon-juice and fresh vegetables.	Cured by purgation and turpentine.

*Dublin Quarterly Journal, Aug. 1847.*

ART. 6.—*On Dropsy after Scarlet Fever.* By MERBACH.*(Journ. für Kinderkrank., Mai, 1846.)*

The subjoined observations on dropsy were made during an epidemic of scarlet fever which prevailed in Dresden between the months of April 1845, and Feb. 1846.

The dropsy generally declared itself from the 14th to the 21st day following the eruption; it was mostly preceded by a chill, but it sometimes appeared without any evident cause, and in the mildest as well as the most severe form of the malady. The subjects of these dropsical effusions were chiefly boys of the scrofulous habit, with pallid complexion and flaxen hair. The conditions of the desquamation appeared to be without influence upon its occurrence.

The œdema was in all cases first perceived in the face, afterwards over the entire body, and more especially the parts of generation. The serous membranes, and particularly the peritoneum, then became involved in the effusion, which in these cavities was muddy, and contained numerous gelatinous flakes. The peritoneum itself, especially the portion covering the intestines, was covered with a greenish exudation, by which the folds of intestines were here and there glued together: it was also thickened and opaque, and in some portions, as in its reflexions upon the under portion of the liver and over the mesentery, was more or less ecchymosed. In these cases the stomach and intestines were considerably distended with gas, and during life there was pain on pressure with occasional vomiting.

Hydrothorax was of less frequent occurrence than ascites, being observed by the author in only four cases out of twenty-three examined by him. In these cases, however, the signs of pleurisy were well marked, the effused fluid being turbid or purulent, and mixed with flocculi of lymph, the pleura itself being lined with a soft false membrane. The hydrothorax was not indicated with any certainty during life by the respiratory disturbance alone, since the dyspnœa in some cases depended upon œdema, with or without partial inflammation of the lungs. The symptom upon which the greatest reliance was placed was the existence of dulness on percussion. Friction-sounds were not observed, but the respiratory murmur was either greatly altered in character by the pulmonary œdema, or extinguished altogether by the progress of the pleuritic effusion. [The author takes no notice of the existence of bronchial respiration, said to be present in pleuritic effusion by Grisolle and others. Vide Abstract, Vol. IV. p. 197.]

Genuine pericarditis was not met with by the author in any instance, but in some cases the pericardial fluid was increased to three or four ounces.

The lungs were œdematous in nine cases; when this was the case they appeared turgid, crepitated loudly upon being incised, and gave issue to a large quantity of bloody serum. In some cases there were found in the inferior lobe of the lungs circumscribed patches of inflammatory exudation, a section of which, however, did not exhibit the appearance of true pneumonic induration. The mucous membrane of the trachea and larger bronchial tubes were covered with a thick tenacious mucus, the smaller tubes being filled with the serous effusion above mentioned. The symptoms of this condition during life are stated by the author to be—extreme dyspnœa, amounting in some cases to orthopnœa; cough with pituitous or rusty expectoration, and occasional sense of suffocation; auscultation revealed bronchial râles of various intonations, together with fine crepitation. The respiratory murmur was more or less extinguished. No inflammatory changes were observed in the heart or large vessels, but the ventricles contained large loose coagula; there was no trace of redness from imbibition, either in the lining membrane of the heart or large vessels. The heart's impulse was frequent and feeble, and occasionally irregular.

The functions of the nervous system were, in the milder cases, uninjured; but in the more severe there were torpor, delirium, and convulsions. After death, the cerebral mass was observed to be somewhat softened, and fluid was effused in the lateral ventricles and under the arachnoid. These fatal lesions occurred in only three cases.

Arriving at the chylipoietic system, the author found that, within a few days of

the supervention of the dropsical symptoms, the tongue became covered with slight fur, and the stomach, as well as the intestines, was occasionally seen to contain an abnormal quantity of mucous secretion. The digestion was impaired in every case, and the appetite was diminished or completely abolished; vomiting was also a frequent symptom. The bowels were usually constipated; the kidneys were always considerably diseased; in severe cases they were bloodless throughout, their external surface being so marked by injection as to have a mottled appearance. The cortical substance was anemic, and infiltrated with hard, yellowish spots, having in some parts a granular appearance. In one case the pelvis of the kidney was much dilated. The urine was always albuminous, but in an intensity differing according to the stage. In general the quantity of the albumen was proportionate to the extent and abundance of the dropsical effusion, and was more considerable in the commencement than at a later period of the disease. A diminution therefore of the albumen does not necessarily denote a decrease of the disease; on the contrary, the author has often noticed that the dropsy regularly and gradually declined, while the albumen continued to be deposited copiously. It is to be remarked, however, that children present an anemic appearance as long as the deposit of albumen continues, and they only recover a rosy tint when that symptom has entirely disappeared. It was observed as a general rule, that the presence of albumen in the urine was accompanied by a diminution of the other solid constituents. The urine was acid in the greater number of cases, in a few it was alkaline.

The progress of the dropsy was very variable. In a few cases death took place on the second day, from rapid infiltration of the lungs; but in general it lasted from two to eight weeks, according to the severity of the case. The subsidence of the dropsical symptoms occurred either in conjunction with a copious flow of urine, or by profuse sweating; in one or two cases by diarrhœa.

The mortality of this epidemic was high, being about one in three. The unfavourable occurrences were traceable to effusion on the brain and lungs, or to pneumonia and pleurisy. The treatment pursued consisted in the exhibition of diuretics, purgatives, and warm baths.

#### ART. 7.—*Treatment of Dropsy after Scarlatina.*

By EDWARD CHARLTON, M. D., Newcastle.

Dr. Charlton describes the dropsy which occurs as a sequela of scarlatina as coming on in two different ways. In one its invasion is intense and sudden, the body being distended with fluid in twenty-four hours, with high fever, full pulse, and almost entire suppression of the urinary secretion. In such cases free general blood-letting was found to be the most efficacious remedy; and this could be, in the cases which occurred to Dr. Charlton in the epidemic described in his pamphlet, the more readily adopted, as the intense attacks of dropsy usually supervened upon the mildest forms of the cutaneous affection. In illustration of this mode of treatment he subjoins an extract from a friend as follows: "The treatment depended much on the nature of the case. If the anasarca was great, with much oppression of the breathing, high fever, rapid but firm pulse, I found one good general bleeding to be followed by the most beneficial effects. This was succeeded by the administration of a mixture of nitrate of potass, liq. ammon. acet., and ant. tart. in moderate doses every two hours, with calomel and compound jalap powder at night, and the latter repeated in large doses in the morning."

Dr. Charlton has occasionally had recourse to the treatment recommended by Dr. Golding Bird. The patient was wrapped in flannel, hot baths were given every night, and he took the following mixture every four hours:

R. Vin. ant. potass. tart. ℥ x,  
Jalep. ammon. acet. ℥ iij,  
Syrup. papaveris, ℥ x (?):

and the following powder every night:

R. Pulv. ipecac. comp. grs. iiii,  
" hyd. c. cretâ, grs. v. Ft. pulv.

Elaterium and other drastic purgatives were also given with advantage.



In the other form of dropsy, where the swelling comes on gradually, with little fever, Dr. Charlton has recourse to similar treatment, with the exception of venesection, which is omitted. When dangerous head or thoracic symptoms supervened, as was sometimes the case, the free employment of drastic purgatives was found most efficacious. Of these, croton oil and elaterium were preferred. Whether the fluid had accumulated in the pericardium, pleura, peritoneum, or general cellular tissue, elaterium, in doses of 1-12 to 1-6th grain every three or four hours, produced the most rapid amendment. Stimulants exhibited at the same time with the purgatives are in some cases necessary, and have the best effect.

Much benefit is, in some cases, derived from the exhibition of the iodide of potassium during convalescence. In patients who were left anemic and debilitated, with tendency to the scrofulous deposit, the preparations of iron were useful, particularly the citrate and the iodide. Lastly, change of air is always beneficial in restoring the patient.

Dr. Charlton has little faith in diuretics, as they appear to increase the renal congestion; leeches over the region of the kidneys answered better.

*Account of an Epidemic of Scarlatina at Newcastle, 1847.*

## SECT. II.—DISEASES OF THE NERVOUS SYSTEM.

### ART. 8.—*The Medical Treatment of Insanity.*

*(Amer. Journ. of Insanity, and Dublin Med. Press.)*

We are often questioned, by letter and otherwise, as to the medical treatment of the insane. To answer some of these inquiries, we think it best to very briefly state our views on this subject, and, in a very general manner, describe the practice adopted at the New York State Lunatic Asylum. No specific remedy for insanity has as yet been discovered. Different cases require very different treatment, and that which would be serviceable at one period of the complaint, might be injurious at another. According to our experience, recent cases, for the most part, require a mild antiphlogistic course; but regard should be had to the cause of the insanity. If occasioned by a blow, or other direct physical injury of the head, or by some sudden and violent mental commotion while in good health, free depletion by bleeding, and active cathartics, are useful, and often indispensable. But such cases are seldom seen in lunatic hospitals. We have very rarely considered it advisable to have recourse to general bleeding at this institution. Only four of the 622 patients that have been here during the past year, have been bled by us. In three of these cases, the bleeding did not appear to be serviceable, in one we thought it highly beneficial. Occasionally, when there is much cerebral excitement, we have resorted to topical bleeding, but more frequently, even in such cases, we derive benefit from placing the feet in warm water, the application of cold to the head, and the free movement of the bowels by laxatives. Pouring cold water in a small stream from a height of four or five feet, directly upon the head, is generally one of the most certain means of subduing violent maniacal excitement we have ever seen tried. But this should be done in a gentle manner, and under the immediate observation of the physician, and should not be continued but for a short time; we also advise, never to resort to it when the patient's bowels are confined, or when he has just been eating, and his stomach is full. The warm bath is also serviceable in many cases, to calm excitement; but for this purpose it should be long continued, at least half an hour, and cold water should be gently applied to the head at the same time.

In a few recent cases, croton oil has proved very beneficial, and we have thought particularly so in some cases that seemed to be cured by the use of it after other cathartics had been tried. Of all medicines, it is the most easy to administer to a patient that refuses to take any, and we have often used it, and never with any unpleasant result.

Bathing in warm water we think beneficial in most cases. Bathing in cold water, or showering, we seldom resort to; probably we should have recourse to the



latter more frequently, if not from the impossibility of preventing patients from supposing it to be intended as a punishment.

Most of the medicines we administer are liquid, or in powder. In addition to the preparations of the articles of the *Materia Medica*, according to the United States Pharmacopœia, we have a few of which we make use, that are prepared by ourselves. The following we often administer :

R.—Extract of conium, ℥vj,  
 Ferri carb. precip. ℥xij,  
 Molasses, wine, water (warm), qts. ij āā,  
 Ol. gaultheria or ol. sassafras ℥ij, dissolved in alcohol ℥viiij.  
 Misce.

Usual dose, half an ounce to an ounce; if a laxative effect is wanted, we add one or two drachms of tinct. aloes and myrrh to each dose.

We sometimes vary the foregoing preparation as regards all the articles, except the conium and iron, adding mucilage, gum arabic, alcohol, &c.

The following preparation we derive benefit from in many nervous, sleepless, and hysterical cases :—

R.—Tinct. lupulini, tinct. hyos. ℥iv āā,  
 Camphor gum, ℥j,  
 Ol. valerian. ℥ xxxij. Misce.  
 Dose one to two drachms.

The following preparation we find useful in some cases of violent mania, and when, as is often the case, the urinary secretion is deficient :—

R.—Tinct. digitalis, tinct. scillæ, ℥ss. āā,  
 Vin. antimon. tart. spts. nitri dule. ℥j āā, Misce.  
 Dose thirty to sixty drops.

Blisters, issues, and particularly setons in the neck, we have often tried, but rarely witnessed any benefit from them, unless they sometimes serve to direct the attention of the patient from his imaginary sufferings and delusions, and thus indirectly do some good.

Emetics and cathartics we do not often prescribe now, as we have seldom known them serviceable; we are, however, careful to avoid a constipated state of the bowels, by the use of mild laxatives or special diet.

Opium has always been used at this institution in the treatment of insanity, and often with great success. In some cases it appears to be useless, and in a few injurious, particularly in those in which the skin is hot and dry, and the pulse full and hard. But such cases are rare. I do not, however, think it a remedy that, of itself, very often cures this disease, but it is a valuable adjuvant to others, and secures a beneficial degree of calmness that cannot be obtained without it. In some cases, however, it seems of itself to effect a cure. Of this we can have no doubt, after having seen many patients apparently recover while taking it freely, and immediately relapse on its being withheld, and again recover under its use, and finally, after continuing it for a considerable time, and gradually diminishing the dose, recover and remain well for years without it.

We rarely give very large doses, seldom more than one grain of the sulphate of morphine, or one drachm of laudanum at a time, usually less. We generally prefer a solution of the sulphate of morphine, two grains to an ounce of water, to any other preparation of opium that we have used. We presume the acetate of morphine is equally good. In some cases Dover's powder has a better effect than morphine, and sometimes laudanum better than either.

I am pleased to find the experience of others in the use of opium in insanity has led them to adopt similar views. Pritchard, in the first edition of his work on *Insanity*, speaks disparagingly of its use; but in a later work he says, "There are few disorders in which so much benefit is derived from this remedy as in cases of insanity."

Many cases, especially those of some months' continuance, require invigorating diet and tonic remedies. The insanity, or rather the causes that produced the insanity, such as grief, anxiety of mind, intemperance, &c., have already debilitated the system, and much caution is necessary not to increase this debility. Hence,

although a patient may exhibit great maniacal excitement, and appear to have great strength, there is usually danger in depleting.

Many of the patients sent to this institution have been injured by too much bleeding and depletion before they were committed to our care. Some, we think, have been rendered incurable by this treatment, and we cannot forbear remarking that, in our opinion, the work of Dr. Rush on the "Diseases of the Mind," in which directions are given to bleed copiously in maniacal excitement has done much harm, and we fear it is still exercising a bad influence, and we hope no future edition will be issued without notes appended to correct the errors into which the distinguished author has fallen for want of the numerous facts which have been furnished since his time, and which enable us to see the errors of our predecessors.

The various preparations of bark, quinine, and other tonic remedies are here used, but no one preparation is so generally prescribed as the combination of cinchona and iron above mentioned, and from none have we seemed to derive more benefit. Ale we often administer with advantage. In many cases of debility and loss of appetite we have found the following preparation quite serviceable:

R	Tinct. cinchonæ comp.	℥j,	
	Tinct. gentian.	℥ij,	
	Tinct. capsici,	℥ij,	
	Quinine sulph.	ʒss,	
	Acid. sulph.	℥xv.	Misce.

Dose, one drachm in water, or better in ginger-tea.

Insanity is often complicated with other diseases, and these need attention. Nocturnal emissions not unfrequently occur to the injury of the patient. In such cases we have derived more benefit from tincture of muriate of iron in large doses than from any other remedy, and we have tried very many. The insanity of some females seems to be caused and perpetuated by passive menorrhagia. It is apt to occur about the time the uterus is losing its functions, and is difficult of cure. We have sometimes derived much benefit from the use of tincture of muriate of iron, but more frequently from the tincture of cinnamon and tincture of aloes combined, from twenty to thirty drops of each.

It should ever be borne in mind that disease in the insane is very apt to be masked,—that serious disease of the lungs or of some of the abdominal viscera may exist, but without being manifested by the usual symptoms, and may, therefore, be overlooked without careful examination. In other respects not particularized in these remarks, we are not aware that the diseases of the insane require different treatment from those of the sane.

#### ART. 9.—*Remarks on Delirium Tremens.* By Dr. SOLTAU.

(*Medical Gazette*, June, 1847.)

[The author of this communication reports a case of delirium tremens possessing features of considerable interest, and particularly remarkable in the fact that the production of sleep, which is usually salutary, was not followed by any permanent benefit, but on the contrary, that several relapses took place, after sleep of four or five hours' duration had been procured by opiates. Upon this circumstance the author remarks:]

Now it usually happens in delirium tremens, that if we can secure our patient a few hours of sleep, he rapidly gets well; in fact, we consider our end attained when this result has followed our treatment. From the above history, however, it will appear that the reverse was the case, for when we were congratulating ourselves that our patient was recovering, from the circumstance of his having had many hours refreshing sleep, both by day and night, for two consecutive days, then it was that the most marked and obstinate symptoms made their appearance. Instead of being better, he became worse than he had been at all. It is impossible to account for this, as every precaution was taken to keep him from anything which might excite him. It was on awaking from a sleep of two hours' duration that he first evinced the decided symptoms of what are very appropriately termed the "horrors," which were never more vividly depicted on any countenance.

Twice after this he got continuous sleep for five hours, and though for a time he seemed better, yet the improvement was only temporary; for eleven days did the disease hold out against all remedies, and bid defiance to all treatment. Our only encouragement was the indication we received from the pulse that the vital powers of the system were not yet exhausted, and the fact, too, that our patient, during all his illness, never refused his food or medicine. The tremor of the hands was not constant, nor did it manifest itself until a late period. The busy manner, the look of apprehension, the constant reference to, and anxiety about his usual avocations, the peculiar illusions, the acute condition of every sense, were very characteristic throughout the progress of the case.

[The general treatment of the disease is then described in the following words:]

And first, as to the question of the abstraction of blood. None, perhaps, will question that general bleeding is to be deprecated under any circumstances, but as to the local abstraction of blood there may be cases where its use is indicated. Great caution is necessarily required in distinguishing where this remedy may or may not be safely used, and the following rules may somewhat guide us. If the patient under treatment be plethoric and of sanguine temperament, and complains of pain in the head, if there be much injection of the vessels of the conjunctivæ, if the countenance be suffused, and the head hot, and supposing the pulse does not exceed 90, and is of good strength, then a few leeches, or cupping-glasses applied to the temples, or behind the ears, may be productive of good. But under no circumstances are they to be used if the countenance be exsanguine, the pulse greatly accelerated, or if there be much tremor with profuse perspiration, and a determination on the part of the patient to refuse his medicine and food.

Secondly, with regard to opiates. Now, though this class of remedies are our sheet-anchor by which we trust, in cases of delirium tremens, to weather the storm, yet in their administration they require a careful attention to the symptoms and stage of the disease, in order that they may not be productive of mischief. How are they to be given? at what time? and in what quantity? are three important questions in connection with their use. Of the several preparations of opium, none perhaps acts more speedily or more certainly than the tinctura opii of our Pharmacopœia; but supposing, after having given it a fair trial for forty-eight hours, our desired end is not attained, we must have recourse to some other preparation. Time, in all these cases, is of great value, for if we are not gaining ground we are losing it fast. The liq. opii sed., or the salts of morphia, if we can depend on the good quality of the latter, may be tried; and this leads us to say a few words on the quantity to be prescribed, and the time of their administration.

Large doses are to be given at the early stage of the disorder, so that if possible sleep may be procured without loss of time; but if, after a fair trial of opiates in their various forms, sleep does not follow, and as it sometimes happens, the system, from want of rest, indicates symptoms of exhaustion, the pulse, for example, becoming 120, the countenance haggard and worn, with increased tremor of the muscular system, and profuse perspiration, then I would suspend them for a time, and for this reason, lest by their continued exhibition, they should be productive of evil instead of good, in suddenly exercising their accumulative power on a system greatly weakened, and thereby unable to rally when depressed by their influence. Death may thus result from the remedy, and not from the disease. That this occasionally happens when opiates are largely given at the latter stages of delirium tremens, I cannot but believe, and having been particularly impressed with this fact in the sudden termination of one or two cases where this practice was adopted, I have thence drawn what I cannot but think is a wholesome caution on this point. In all cases of delirium tremens it becomes a subject of encouragement to us if the patient can be persuaded to take his food, for we are thereby able, to a certain extent, to supply the waste which the exhausting nature of the disorder produces in the economy, and thus sustain its vital powers. Under these circumstances opiates may be continued with safety; but, on the other hand, if we have given them largely, and no benefit has resulted from them, but we perceive that the strength of our patient is rapidly failing, as is often the case in this disease, then it is better, for a time at least, to turn our attention from this to some other remedy, and endeavour, if we can, to restore the failing powers; for it is better that a case



should terminate of itself fatally, than that its end should be hastened, if not actually occasioned, by the remedies that may be administered.

With regard to stimulants, it is usual to select that which the individual has been accustomed to indulge in when in health, but it is very questionable whether their exhibition is indicated in all cases. Supposing the pulse continues firm, and there is no other sign of failing strength, they may be dispensed with altogether, and, in their stead, may be administered some form of tonic, as, for example, *Öij* of *compt. tinct. of gentian*, in a bitter infusion, every three or four hours, a small quantity of laudanum being added to each dose; at the same time, nourishing diet is to be given, and attention paid to the state of the bowels, which are often confined. To relieve them, warm cathartics may be ordered in small doses, or a stimulating enema.

During the progress of *delirium tremens*, it often happens that the patient becomes very restless, is anxious to go about his work, imagines that he hears voices summoning him to his post of duty, and cannot be persuaded to remain in bed. Under these circumstances, how is he to be restrained? There are some who see no harm in his being permitted to follow his inclination to a certain extent, and they therefore would not object to his getting up, and walking about his room, thinking that thus sleep may be induced. This, however, does not accord with my views, as, in my opinion, excitement and irritability, both of mind and body, would be thereby increased, rather than allayed. Instead of this, the room should be darkened, and we should first try what we can do by persuasion to keep our patient in bed; but if, in defiance of all our entreaties, he becomes more and more excited and self-willed, meeting any opposition to his wishes with violence, then it becomes a matter of serious moment to know in what way we are to act. Now it is at this particular juncture that the strait-waistcoat is put into requisition, but often, we believe, with most disastrous consequences; for what happens? Why, the feeling of restraint increases the desire to overcome it; and when he becomes conscious that he is conquered, the patient strains every nerve to release himself from his bondage. His anger calls to its aid all his remaining strength, and he makes one last and great effort to shake off his fetters. The less he finds his efforts available, the more excited does he become, and he continues vainly struggling with himself until his strength becomes gradually exhausted, and he sinks worn out. Believing, therefore, that evil, rather than good, follows the use of the strait-waistcoat, we must look for some other remedial means wherewith to calm the excited condition above referred to, and we think that the tepid bath will be productive of the desired result. The patient may be easily induced to try it; and, having remained in the bath about a quarter of an hour or twenty minutes, he will leave it, less excited in his manner, with a desire to remain quiet. The sedative influence of the bath continues to show itself for some time; and, during this period, supposing there be no sleep, a large opiate may be given. With regard to the use of the bath in this disease, we think it may be always tried when opiates have signally failed in producing sleep or in tranquillizing the system, and its sedative influence will more than counterbalance its exhausting effect on the economy.

[In a subsequent communication (*Medical Gazette*, Aug. 6), the author treats of the causes, diagnosis, and prognosis of *delirium tremens*. In reference to the causes of the disease, he points out the errors which not unfrequently arise from the prevalent habit of looking upon the abuse of alcoholic liquors as the sole cause; and insists, most justly, on the power of any agent which exhausts the nervous system to produce phenomena precisely identical. "Anything," he observes, "which tends to lower the vital powers of the economy, the nervous energy of which has been already exhausted, may be productive of a condition similar to that of *delirium tremens*; so that though a case presents itself with features closely resembling the latter affection, we are not to conclude that it has no affinity because it has not a common cause of origin."

The diagnosis is thus laid down by him:]

The two diseases with which *delirium tremens* might be confounded, are inflammation of the brain and mania. An error of judgment as to the former of these would lead to the most disastrous consequences; for it is scarcely possible to mention two diseases which require more opposite treatment than *delirium*

tremens and phrenitis. In all the cases which I have seen, the symptoms have been so well marked, as to render it almost impossible for a mistake to be made. There has been no fever, no intolerance of light; the pupil has acted freely, and instead of the dull heavy manner so often seen in affections of the brain, there were a quickness and excitability almost characteristic. The delirium too is of a busy kind, connected usually with the patient's ordinary avocations, instead of the incoherent wanderings which attend cerebral inflammation.

[As an additional means of diagnosis, the reader is referred to Art. 6, of our last Volume, where he will find that the relative proportion of the phosphates in the urine is made a ground of distinction between the two diseases.]

The diagnosis between delirium tremens and mania is not always easy to make out, nor do I think that it is of much moment, as to treatment, on which we decide. The history of the case may sometimes help us, but cannot always be relied upon. As a disease associated with exhausted nervous power, it resembles those attacks of mania that have their origin in a similar cause. All treatment being based upon diagnosis, the correctness of the one is dependent upon the accuracy of the other. When therefore the general character of the disorder is understood, it matters little as to the name we may give it, the object being to distinguish between excitement, the result of inflammatory action, and that which follows depressed nervous influence.

[Of the prognosis Dr. Soltau observes:]

This must be formed upon the same general principles as regulate us in other diseases. The state of the patient, as to whether his constitution be much impaired by dissipation—whether it be the first or second attack of the disorder—are guides which may assist us. When once sleep has been obtained, we may (generally) consider the patient out of danger, though the case reported proves that this rule has its exception. Until sleep be obtained we must be cautious in the opinion we give. Though there be nothing in the case which apparently warrants anxiety, yet there is something so insidious in the progress of the disorder, as to keep us always on the watch. The sudden termination of delirium tremens in a fatal manner, when least expected, admonishes us not to be too sanguine in our expectations of recovery. It must be known to all who are accustomed to witness these cases, that they are occasionally cut short by a fit of an epileptic character. The patient becomes more excited, struggles hard to liberate himself, till, at length, he is convulsed, and ere medical aid can be obtained, is perhaps a corpse. This must be always borne in mind, and we can never feel satisfied as to the state of a patient in delirium tremens till he has had refreshing sleep of some hours' duration, and has lost his fancies and his horrors. It may be always considered favourable if he is willing to comply with the orders of his medical attendant, and can be persuaded to take his food and medicine. Excessive tremor and profuse perspiration are both unfavourable symptoms, as they indicate a very exhausted condition of nervous power. Under these circumstances, stimulating tonics are of use. The weaker the physical powers become, the more do the spectral illusions increase. In the fatal cases which I have seen death took place at an early stage of the disorder, with the exception of one patient, who lived between three weeks and a month. [This could not have been an instance of genuine delirium tremens. Ed.] I am inclined, therefore, to look favourably on those cases which have passed over the sixth or seventh day, provided no unfavourable symptom has arisen.

ART. 10.—*Treatment of Epilepsy*.—M. Plouvier, of Lisle, has presented a memoir on this disease, recommending a system of treatment, which consists in the following processes:

1. The exhibition of medicines which have the power of modifying the cerebral functions. Of these he prefers the subjoined combination:

Extract of belladonna	grs. xxx;
Powdered digitalis	grs. xlv;
Indigo	ʒiiss;
Mucilage sufficient to make 50 pills.	

Three or four days before the expected attack, he commences with one pill

twice or three times a day, increasing the dose, if no effect is produced, until some degree of intoxication or somnolence declares itself. He then omits medicine altogether for two or three days after the attack and recommences as before. This plan is persisted in for a year or more, if necessary.

2. Cold baths. These are to be taken every day for two or three minutes. After coming out of the bath, the patient is to be enveloped in blankets to induce perspiration.

3. The boot of Junot. This is an apparatus by which great determination of blood may be induced over a large space, as both or one lower extremity, upon the principle of the cupping-glass. The apparatus is made in the shape of a boot, whence its name, and the contained air is exhausted by means of an air-pump.

*Gazette Médicale*, 11 Sept.

ART. 11.—*On Coma, or Temporary Loss of Consciousness, from Accumulation of Bile, Worms, or other Irritants.* By GEORGE CURFE, Esq.

(*Medical Times*, Oct. 9, 1847.)

[We extract the subjoined remarks from an Essay upon the "Physiognomy of Disease," which throughout exhibits an accuracy of observation on the part of the author not more important than it is rare. After contrasting the different forms of cerebral insensibility which are met with in practice, such as the true apoplectic stupor, the coma of arachnitis, of renal disease, of narcotic poisoning, &c., he thus alludes to the form of coma, which is symptomatic of irritation of the gastro-hepato-intestinal mucous membrane.]

Many cases occur in private practice, the symptoms of which are termed "apoplectic," but which, in truth, may be called "biliary congestion," "hepatic engorgement," "pent-up or morbid cystic bile." I will, however, proceed to mention what I mean by these terms, and, in doing so, I may add that I now write, unfortunately, from some little personal experience of former days. An individual presents himself to your notice describing his symptoms. He is a robust, well-formed man, from thirty to fifty; inclined, perhaps, to corpulency, and may be he is "pansu," or, as the pauper females term it, "high-stomached." He is fond of living freely upon animal food and beer, &c., and follows a somewhat sedentary life. He relates that he is occasionally attacked with pain over the forehead to such a degree that he becomes quite muddled, and unfit for work, or unable to exert himself, either mentally or bodily, in his daily calling. There are, from time to time, tinnitus aurium and vertigo; he gets rather deaf in one or both ears; his sleep is either more heavy and prolonged than usual, or it is attended with horrid and disagreeable dreams, and he is more restless and feverish than he is wont to be. He has but little appetite, his knees totter under him as he walks, his heart intermits, he is occasionally short in his breath, and he thinks himself weak, and out of sorts; but does not know where he is ill, as he suffers little or no pain. Now, these ailments are the forerunners or shadowings forth of a more serious train of symptoms, which may, and do often follow, if active measures are not adopted for their mitigation. The patient goes on to describe a numbness felt down one arm and leg, an odd sensation in the face of the same side; his former symptoms continue, and he becomes uneasy, and seeks for relief. When you see him enter the hospital admission-room, you observe an awkwardness of gait, and tottering or dragging of one leg, an expressionless countenance, and a dull, heavy eye. He is evidently very low-spirited, perhaps bursting into tears before he has told half his sad tale of suffering. Well, such cases formerly would have been called, and still are called by a very large class of practitioners, "apoplexy," and they are not considered safe, nor is it deemed legitimate practice, unless the arm is instantly laid bare, and the lancet made to let out twenty or thirty ounces of blood, with subsequent cupping or leeching in an unsparing manner to the head, &c. Whereas the admirable practice adopted in the medical wards of this hospital by Dr. Seth Thompson has taught me, by the extraordinary and gratifying results, that this practice is both useless and prejudicial.

As soon as the patient is in bed a full dose of calomel and colocynth, such as five grains of the former, and ten grains of the latter, is administered, followed up in four hours by a large cathartic draught; his head is shaved, and, if there is



much heat about the forehead, eight or ten ounces of blood may be taken away by cupping behind the ears. But this is by no means an ordinary part of the treatment. In the course of the following morning the nurse shows us a copious evacuation, dark as the darkest mahogany or chocolate, fetid, abominably so, and containing but little fecal matter. This is cystic bile—bile that has been “laid up” in the gall-bladder—that has become inspissated, heavy, and morbid, and could not find its way into the common duct, owing to the gorged state of the hepatic biliary system on the one hand, and to the congested mucous surface of the duodenum and stomach on the other. This bile is, therefore, a noxious accumulation, a morbid product, and acts as a poison upon the nervous and vascular system, just in the same way, and in somewhat a similar manner to the poison of urea when it circulates in the blood, and is not sent forth by the kidneys. The dose is again and again repeated, perhaps for five, seven, or ten times, and at length pure healthy bile passes away, without fœtor, of a canary colour, and emitting a faint odour very analogous to the smell of the narcissus, or daffodil flower. The head becomes clear; the intellects brighten up; the patient is lively, active, and in good spirits; the sleep is tranquil, refreshing, and moderate; the appetite becomes keen; and he walks across the ward with a firm, steady, and equal pace. But, although this manifest improvement has taken place since he has got rid of the “pent-up poison” that lurked in his system, yet does there still remain a slight weakness of the arm and leg. This excellent practice has been attended with singular benefit. A blister is now laid over the whole length of the longitudinal sinus, and the discharge is kept up from its surface by means of the savine ointment, whilst the purgative treatment alluded to is still persevered in from time to time. Thus have I seen cases, but especially during the last season, become perfectly convalescent, and leave the hospital without the slightest appearance of hemiplegia, and without having undergone any depletion.

The following is an instance of many such cases. A female, about forty-five, entered an hotel in Bond street, as charwoman, between six and seven o'clock in the morning (in March), and soon afterwards became faint, sat down in a chair, when the “boots” went and called up the master, who came down, and, finding her speechless, and unable to walk on one leg, instantly ordered a cab, placed her in it, and came himself to the hospital with the patient. I saw her immediately on her admission, and finding that she was of a spare habit, and not a free liver, I was resolved to use no active depletion, but to commence unloading her liver by calomel and colocynth, in no measured doses. Of course the master knew little of her habits, as she was merely an occasional scourer in his kitchen, &c., only that she was not addicted to drink, as he informed us. I believe it would astonish many practitioners, had they witnessed the beginning, progress, and gratifying termination of this case, under the judicious, bold, and decisive treatment of her physician, Dr. S. Thompson. After the evacuation of large quantities of dark bile, of the most fetid nature, penetrating in offensiveness of smell to such a degree, that the moment a person entered the ward (thirty feet by eighteen feet) he might detect its effluvia; and after the free discharge of a blister applied over the whole vertex of the head, and when pure, pale, rhubarb-coloured bile began to flow, this patient not only regained the full use of her speech and faculties, but she got up, dressed, and fed herself—in short, walked about the wards and hospital garden, and left the institution as perfectly free from those symptoms for which she entered it, as though she had never been the subject of such an alarming attack.

ART. 12.—*Diagnosis in Cerebral Disease.*—Mr. Corfe remarks that it may be laid down as an axiom, that whenever a sudden lesion has been offered to the brain, the eyes are closed, and the patient is insensible; whereas if the same organ is the seat of a slow and progressive disease, the eyes are half closed or wide open, and there is some distortion of the features, irregularity of the pupils, and dulness in the whole countenance, with palsy of the body.

*Medical Times, Sept. 18, 1847.*

[The state of the eyes, as distinctive of sudden from progressive lesion of the brain, requires confirmation.]

## ART. 13.—On Spinal Apoplexy.—By Dr. PEDDIE.

(Monthly Journal, May, 1847.)

[After relating a case supposed to have been one of spinal apoplexy, but as we consider without sufficient evidence, Dr. Peddie analyses and tabulates all the instances of that disease which he has been able to find recorded, and from them deduces the following inferences.]

1st. Spinal apoplexy occurs at all periods of life, but is least frequent in infancy, and most in the middle ages.

2d. In the largest proportion of cases males are the subjects of it.

3d. Its progress to a fatal termination is in general rapid, almost immediate, when the medulla oblongata is its seat; a few hours or days when it occurs high up in the column, or the quantity effused is great; but life is sometimes protracted when it is to a limited extent in the lower part of the cervical or in the dorsal regions; for in the first instance, the patient survived the extravasation five years, in the second, one year, and in the third, two years and seven months.

4th. Its situation and extent are various. Sometimes it occurs between the bones and membranes, or between the membranes or under the pia mater, but external to the cord, or in the gray substance, as most commonly happens. It is of comparative rarity in the cranial portion of the cord, which appears remarkable when the frequency of extravasation in the annular protuberance is considered; it is of nearly equal frequency in the cervical and dorsal regions; and is least common in the lumbar region. The blood is occasionally mixed with serum, sometimes pure and fluid, but generally coagulated; sometimes it is diffused over a large extent of surface; sometimes circumscribed, assuming the form of small defined clots. These clots are sometimes destitute of any cystic formation, even after the lapse of twenty or thirty-four days; in other instances they appear to have been surrounded by a well-formed adventitious membrane; and in the first of these cases, at an interval of four or five years, the cyst was found empty, and in the second, were contained only the broken remains of a coagulum. Sometimes the blood is found infiltrated in the median line of the cord, or in one of its two halves, or through its entire thickness, merely separating the medullary fibres; but in other instances a portion or even the whole cord, both white and gray substance, may be completely broken up.

5th. The causes of spinal extravasation, both predisposing and exciting, are imperfectly known. The most probable predisposing causes are the strumous or rheumatic diathesis, long-continued dyspepsia, the previous occurrence of cerebral apoplexy, or organic disease of the brain; of exciting causes, the most probable are over-fatigue and strains of the vertebral columns.

6th. The premonitory symptoms are neither well marked nor invariable. The most common immature symptoms are headache, languor, and debility, various degrees of pain corresponding to the part at which the extravasation is about to occur, stiffness of the neck, pains in the arms when the cervical region is affected, feebleness of the legs, and difficult micturition when the dorsal or lumbar regions are implicated.

7th. The matured symptoms are usually, but not always, sudden invasion or increase of pain, without acceleration of pulse; paraplegia, with or without, and when death does not speedily occur, spasmodic contractions, sloughing of the nates, &c.

8th. The pain is felt at one period of the spine if the extravasation be limited, but along the whole column when the effusion is more general. It is most acute when the extravasation is external to the cord, and becomes extinct when the cord is compressed. It is absent altogether when the effusion takes place primarily and gradually in the gray substance, without lacerating the nervous filaments, or subjecting the membranes to pressure.

9th. The paralysis invariably affects all the parts supplied by nerves originating below the seat of the extravasation. It may assume the form of hemiplegia when the extravasation is small, and compresses a portion of the cord on one side. When this occurs, the effect is *direct*, and not *cross*, as in cerebral hemorrhage.

With the paralysis of the lower extremities the voluntary power over the rectum and bladder is also impaired or lost.

10th. The *sensorium* is unaffected in apoplexy of the vertebral portion of the cord, but insensibility immediately ensues when the medulla oblongata is affected.

11th. Respiration is not affected in apoplexy of the lower half of the spinal cord. When, however, the effusion is in the medulla oblongata, death by asphyxia speedily ensues. The same result occurs whenever the injury is above the origin of the phrenic nerve.

12th. *Convulsions* may occur without inflammatory action.

13th. *Muscular contraction, twitchings, and tetanic spasms* are consecutive to the apoplectic seizure, and indicate the supervention of inflammatory softening around the clot.

[It is not easy, from the above inferences, to deduce any certain pathognomonic signs of spinal apoplexy, and many of the signs may originate in other spinal lesions; but Dr. Peddie thinks] "that if all the parts of the body below a certain point to the spinal part suddenly become paralyzed, especially if pain has been suddenly felt at this point, and if it is ascertained that the spine has sustained no concussion, and that there is no affection of the sensorium, speech, or muscles of the face, and that no fever, muscular spasms, or contractions are present, then there is reason to conclude that sanguineous effusion has taken place. The suddenness of the attack distinguishes it from a morbid growth pressing on the spine, the unimpaired intellect and paraplegia will distinguish it from cerebral disease, and the absence of fever at first, of pain after the palsy is complete, and of spasms and rigidities in the early stage of the disease, will serve to discriminate between it and inflammation of the meninges or medullary substance."

[The treatment of spinal apoplexy is unsatisfactory. Dr. Peddie recommends absolute rest, general or local bleeding, according to circumstances, and derivatives. He gives the prudent caution that, under the depressed condition of the vital energy in the paraplegic state, mercury, iodine, and especially counter-irritation, should be used only with the greatest circumspection.]

#### ART. 14.—*On the Treatment of Sciatica.* By Dr. SEYMOUR.

(*Thoughts on several Severe Diseases of the Human Body, vol. i.*)

The first thing to be done when consulted for sciatica is to ascertain that it really is a purely painful affection of the nerve. There are two diseases which Dr. Seymour states may be mistaken for it, viz., disease of the hip-joint, and disease of the kidney, especially the secretion of uric acid. The diagnosis is thus laid down by him. "Painful affection of the sciatic nerve is distinguished from disease of the hip-joint by no pain being felt on pressing the head of the bone upwards against the acetabulum; by the pain not being increased by striking the heel on the ground; by the absence of swelling and pain in the groin; but, above all, by the absence of fever at the commencement, and of hectic as the disease proceeds to suppuration; and, finally, by pain on pressure in any part of the sciatic nerve, when this is really the seat of the affection."

Nephritic disease is distinguished from sciatica by pain in the forepart of the thigh, numbness of the groin, occasional tenderness of the testicles, and drawing up of one towards the belly; frequent micturition; by the presence of crystallized lithic acid in the urine; and by an occasional fixed pain midway between the umbilicus and the spine of the ilium.

Having ascertained that the pain is dependent upon the state of the sciatic nerve, the physician must endeavour to ascertain whether it is idiopathic or symptomatic of disorder of the stomach, or of the syphilitic taint; or, finally, whether it is indicative of disease in the brain itself.

If the patient be robust and a good liver, a succession of brisk purgatives will cure the disease; the pain frequently in such subjects depending upon distension of the colon. If the pain has succeeded to a chill, cupping followed by blisters with the vapour-bath are recommended. In other cases, in which a person has taken violent exercise after the fatigue of professional life, Dr. Seymour considers



that the pain is best treated by sedatives and tonics, with perfect rest. In a case mentioned he cured the disease by the following:—

R. Pil. galbani c.	ʒj;	
Ext. conii	ʒij;	
Quinæ	ʒj.	M. ft. pil. xxiv.
R. Acetatis morphinæ	gr. ss;	
Aquæ flor. aurant.	ʒj;	
Aquæ font.	ʒx.	M. ft. haust. hsc.

The next consideration is the treatment of the disease when it is symptomatic of the state of the stomach. If the patient is gouty, the preparations of colchicum will be of importance, and in severe cases quinine in large doses during the day, and colchicum at night. The use of colchicum is not limited, very properly, to the cases of supposed gouty origin.

If it is discovered that the disease arises neither from repletion, nor constitutional depression, nor from disordered stomach, care should be taken to ascertain that no syphilitic taint exist.

Having thus spoken of sciatica, which may be considered as symptomatic of other local or previous constitutional disorder, Dr. Seymour next treats of the idiopathic disease. In this form of the complaint he mentions acupuncture in terms of commendation. Other remedies are stramonium, belladonna, and hyoscyamus. Belladonna is to be given with caution, in doses from 1-6th to 1-3d of a grain. When the pain commences in the sacrum, with dull gnawing pain in the loins, Dr. Seymour has seen great relief afforded by the wearing a bandage lined with oil-silk next the skin. The hot-air bath is likewise advised in the idiopathic disease, as is quinine when the powers of the system are feeble. Galvanism is not highly thought of by the author as a curative agent. Finally, some cases are alluded to in which no medicine appears to have any effect in suspending the pain, but opiates in large doses, and these must be persisted in in order to save life. An instructive case in point is narrated.

#### ART. 15.—On *Intercostal Neuritis and Neuralgia*. By M. BEAU.

(*Archiv. Générales, and Medico-Chirurg. Rev., July, 1847.*)

Since the researches of MM. Bassereau and Valleix, intercostal neuralgia has taken its place among the acknowledged affections of the economy; but with it other cases, for which the term *neuritis* would be more applicable, have been confounded. Dr. Beau's attention was first directed to the subject while contemplating the nature of the painful sensations in injuries of the ribs. Of two such cases, in the one case a severe contusion of the thorax, and in the other actual fracture, took place at the junction of the posterior and middle thirds of the ribs; and in both cases, while some degree of pain existed at the precise seat of injury, that of an intense character was located anteriorly near the sternum. It was the latter that became intolerably increased by coughing, sneezing, or other respiratory efforts. In these cases the pain was explicable only on the supposition of an inflamed state of the intercostal nerve consequent upon the injuries, the severest suffering being referred to the periphery in consonance with a well-known law.

Neither of these patients dying, the positive proof of the existence of such neuritis was wanting; but these cases led to the consideration of others of much more common occurrence, in which the existence of the peripheric pain and the means of proving its dependence upon an inflamed state of the nerve alike exist. Such are cases of inflammation of the pleura, whether simple or complicated with pneumonia. It is familiarly known that the "pain in the side," so constantly present in these, is seated in the great majority of cases near the breast. It is, in fact, but the expression of pain at the peripheric extremity of the intercostal nerve, induced by inflammation of the portion of this nerve which is in contact with the inflamed pleura. The posterior portion of the nerve alone is inflamed, and yet the severe pain is excited at its periphery.

The intercostal nerves, during the posterior portion of their course, that is, from the articulation of the ribs to their angle, are in immediate contact, on the external side, with the external intercostal muscle; and, on the internal side, with the

parietal layer of the pleura. From the angle of the ribs to their termination, the nerves cease to be in immediate relation with the pleura, being separated from it in all the rest of their course by the internal intercostal muscle. It seems scarcely possible for the nerve to be so closely in relation to the inflamed pleura without its participating in the diseased action; and, in point of fact, at post-mortem examinations we always find this portion of the nerve more or less inflamed during the whole portion of its course that is in contact with the inflamed pleura, such inflammation not extending beyond the angle of the ribs, where the nerve becomes separated by the muscle from the pleura. There is frequently a somewhat intense injection, not only of the neurilemma, but of the nerve itself, with enlargement of its substance, as may be seen by comparing it with the uninflamed nerves in contact with uninflamed portions of pleura. The inflamed nerve has not seemed more friable than the others, but is sometimes slightly adherent to the contiguous pleura. It is to be remembered that pleurisy and pleuro-pneumonias are situated, in the great majority of instances, at the posterior portion of the chest, and yet the pain is felt at its anterior portion, as already observed. If this statement be correct, the pain induced at the anterior extremities of the intercostal nerves should vary in its longitudinal direction according to the height in the thorax at which the pleuritic inflammation is seated, and this is precisely what takes place: for, accordingly as the pleurisy affects the first four or five, or the lower four or five intercostal nerves, so is the pain felt at the anterior portion of the corresponding intercostal spaces. And, as the anterior extremities of the last five nerves, instead of turning up with the cartilages, proceed downwards and forwards, between the muscles of the abdominal parietes towards the median line, the pain proceeding from the inflamed pleura is then manifested in the abdomen. It results from these details, that the seat of the peripheric pain of the inflamed nerve may serve as an excellent guide to the exact seat of the pleurisy, as all we have to do is to trace directly backwards along the course of the affected nerve. If local bleeding applied to the seat of pain, instead of the seat of the neuritis, readily dissipates the pains, it does so because it operates a derivation at a certain distance from the inflamed part upon the intercostal vessels feeding the inflammation—just as, in orchitis, we place leeches over the cord, and not upon the scrotum.

Ordinarily all the nerves in contact with the inflamed pleura are equally inflamed, but all are not equally painful at their extremity. It will be found, in general, that that nerve is most affected which corresponds to the rib possessed of most extensive movements. This is why, in most cases, the patient refers the most vivid pain to the anterior portion of the sixth or seventh intercostal space, because in most patients, and especially in men, the seventh rib is that which executes the greatest amount of movement. The patients will generally complain of pain at one of the intercostal spaces, but it is rare for only one nerve to be thus affected; and, if we compress the spaces adjoining that at which the sensations of the patient seem to be centered, we find that others are similarly affected, though in different degrees. The difference in the intensity of suffering is very great; for while some nerves are excessively painful, others, equally inflamed, give signs of scarcely any pain. Differences in pathological susceptibility analogous to this are, however, familiar to attentive observers; and it is the entire absence of such susceptibility in certain individuals, that permits *latent* pleurisy and pleuro-pneumonia to become developed without the manifestation of pain in the side, or any other symptom of the disease.

We have hitherto laid it down as a law, that the posterior inflamed portion of the nerve *only* manifests pain at its anterior extremity; but there are some exceptions to this. We have observed, in the most careful manner, cases of pleurisy in which pain existed simultaneously at the extremities of the intercostal nerves, and at the portion of the spinal column corresponding to the affected nerves. The latter pain is not, however, spontaneous like the former, but for its induction requires slight pressure to be made on the side of the spinous processes corresponding to the inflamed nerves, and then as many painful points will be recognized posteriorly as anteriorly. Every one is aware that, during percussion of the posterior portion of the thorax in pleurisy, pain is produced. This is always referred to the inflamed pleura, but in fact is a posterior radiation of the inflamed intercostals. This pain at the posterior portion of the thorax is not fixed, as the anterior

pain in the intercostal branch properly so called, but in the branch which terminates in the muscles and skin of the back; and yet in necroscopies we are enabled to show that this dorsal branch is no more inflamed than is the anterior extremity of the intercostal nerve, the pain being, in the one case as in the other, a distant result of inflammation affecting the portion of nerve in contact with the inflamed pleura.

These pains of the side, then, commonly termed *pleuritic*, are justly so called, on account of their relation to pleurisy. But pleurisy does not produce them *directly*, inasmuch as they result from the inflamed state of the first proximal extremity of the nerve. The pains which continue to be felt after the cessation of a pleurisy, and which are usually referred to adhesions, are, in point of fact, produced by the neuritis become chronic. When there is inflammation of the lung without inflamed pleura, we have then no pains in the side, no neuritis capable of producing them having been generated. There is another form of pleurisy, in which the intercostal nerves are liable to become inflamed—that which is consecutive to pulmonary tubercle, and which is then seated at the upper part of the chest. The pain resulting from this is felt at the anterior part of the first intercostal spaces, but is much less severe than that of acute pleurisy. Those dull pains existing just under the clavicles, and which, according to pathologists, are a frequent symptom and an immediate result of the presence of tubercle, are, in fact, produced by the development of pleuritis consecutively to the tubercle. Besides these pains, phthisical patients occasionally suffer from others in the supra-clavicular region of a far more intense character, forcing cries from the patient, and requiring the endermic use of morphia for their relief. These, in all probability, depend upon a neuritis of the first intercostal nerve, which sends one of its branches to anastomose with the brachial plexus. This last is in communication with the cervical plexus, and we can understand how the neuritis of the first intercostal may in this way induce pain in the region of the neck, and even down the arm.

In comparing intercostal neuritis with intercostal neuralgia, we should first distinguish the varieties of this last. The most important of these is that described by M. Bassereau as “commonly sympathetic of an affection of some viscus, whose suffering is transmitted to the intercostal nerves by means of the anastomoses of the great splanchnic.” M. Bassereau believes the uterus and its appendages to be the seat of the irritation thus propagated, inasmuch as women are much oftener the subjects of intercostal neuralgia than men, and that the women so affected, in the majority of cases, are suffering from some disturbance in the uterine functions. M. Beau demurs to this latter conclusion, believing that disorder of the digestive organs is the point of departure of the neuralgia; for—1, the great splanchnic is in communication with the semilunar ganglions and lunar plexus; 2, although these females are suffering from derangement of the uterine functions, they are so in a much more marked degree from that of the digestive organs; and, 3, that in all the male patients liable to this neuralgia, the number of whom is greater than M. Bassereau believes, there is a marked disorder of these. Dyspeptic symptoms need not be excessive, and yet the disorder they indicate may have a pathogenic influence upon various organs. So connected with dyspepsia has M. Beau long considered this neuralgia, that he always terms it in his clinical lectures the *dyspeptic neuralgia*. Whenever such neuralgia disappears completely, the digestive functions have recovered their normal integrity; and to combat the neuralgia effectually, we must attack the dyspepsia—all means directed to the relief of the former, without attention to the latter, being merely temporary and palliative in their operation. This dyspeptic neuralgia affects principally the nerves corresponding to the ganglions, which furnish the constituent branches of the trisplanchnic nerve, that is to say, the intercostal nerves comprised between the fifth, sixth, and seventh intercostal spaces. As in neuritis, there is always one nerve more affected than the neighbouring ones, and that corresponding to the rib possessed of the most extensive movements. Generally five or six intercostal spaces are simultaneously attacked, although in different degrees. This neuralgia, as shown by M. Valleix, also frequently presents three painful points: one at the termination of the intercostal branch; another where the middle perforating branch is given off; and the third over the dorsal branch, near the spinous processes. Its duration is generally chronic, like that of the dyspepsia upon which it depends,



and during its progress it exhibits sometimes regular, but generally irregular intermissions.

The second variety of intercostal neuralgia is that dependent upon rheumatism, *rheumatic neuralgia*, commonly termed *pleurodynia*. Very frequently only one of the intercostal nerves is affected, but the pain is very intense, especially if excited by pressure. It sometimes reaches the extent of preventing the patient lying down, and impeding the respiratory movements, which become short, irregular, jerking, and accompanied by interrupted exclamations. It is worse at night than by day, the maximum of its intensity being seated at the anterior portion of the intercostal nerve. It may be sometimes excited posteriorly by pressure over the dor-al branch of the nerve, but it never spontaneously arises there, as it so frequently does in neuralgia of a dyspeptic origin. This acute form only continues for some days, and may be accompanied by fever, when it puts on the greatest resemblance to neuritis. It affects men as frequently as women, while dyspeptic neuralgia, just as dyspepsia itself, most frequently affects women.

In comparing neuritis with these neuralgiæ, we observe that their symptoms have much resemblance, especially as regards rheumatic neuralgia. The pain of this, as of neuritis, felt towards the anterior portion of the intercostal space, is very intense. It is less so in the dyspeptic variety, and the patient in the latter frequently complains of pain over the dorsal branch of the nerve, which in neuritis or rheumatic neuralgia is generally only produced upon pressure. The dyspeptic form especially affects the nerves between the fifth and seventh ribs, while the seat of pain varies in the others according to that of the pleurisy, or the part affected by the cold, which has induced the rheumatism. Dyspeptic neuralgia is liable to frequent intermissions and exacerbations, which neuritis and rheumatic neurosis rarely are.

"The ideas, so long since considered as classical, respecting the vivid sensibility of the pleura and the pungent kind of pain resulting from its inflammation, ought, I believe, to be discarded, seeing that the acute and pungent pains of pleurisy do not proceed immediately from the inflamed pleura, but from the intercostal nerves, which the inflammation of the pleura has invaded."

### SECT. III.—DISEASES OF THE RESPIRATORY SYSTEM.

ART. 16.—*Account of a Physical Sign of Pneumonia of the Apex of the Lungs.* By W. BOLING, M. D. (U. S.)

(*Amer. Journ. of Med. Sciences*, July, 1847.)

The writer remarks that his experience, so far as it extends, is confirmatory of the opinion that Pneumonia, commencing at the apex of the lung, is, in proportion to the number of cases, the most frequently fatal form of the disease. He has met with about six cases of this affection, at least has recognized or identified about that number. They all proved fatal. Three of these he notices.—In one, the subject of which was a powerful and robust Irishman, 30 years old, "fond of a dram," but not decidedly intemperate, and previously in good health, the disease supervened on an attack of acute bronchitis, about the fifth day, and proved fatal on the fourteenth day, counting from the first day of his illness. In the second case, the patient was a rather delicate negro woman, about 28 years old; the attack commenced during a slight indisposition of a catarrhal character, and proved fatal on the thirteenth day. The other patient was a strong and robust negro woman, about 22 years old, previously in good health, and in her case the termination was on the ninth day.

The general symptoms and march of the disease in these cases did not differ in any material point from those in the more common form of pneumonia, except in the point of commencement, and in this, perhaps—that the morbid alteration had proceeded to a less extent, at the time of death, than is commonly the case in the latter; that is, death supervened from a less extensive local disease. In the other cases, the lung ran most rapidly into a state of hepatization, the solidification not being preceded by the crepitant bronchus, but by a total absence of the respiratory

murmur, while the chest over the affected part remained still resonant on percussion.

The author's object, however, in the present remarks, is simply to speak of a physical sign that was present in each of the three cases detailed, which he presumes also to be present in others of the same character, the observance of which may probably lead to a correct diagnosis at an earlier period, in some instances, than would otherwise be made. This is a fine mucous or crepitant rhonchus, seemingly seated in the larynx, loud enough to be heard distinctly at the distance of two or three feet from the patient, and so *persistent*, that it is not removable, or but momentarily, by any effort to expectorate which the patient may make, while at the same time, there are present none of the signs of bronchitis or laryngitis. Though it is exceedingly annoying to the observer to hear it, because it impresses him with the belief that it is distressing to the patient, and he looks with a feeling rather of impatience for an attempt, by an effort to expectorate, for its removal, the patient seems perfectly indifferent to its presence, which would not be the case were it really produced by the presence of a small quantity of tenacious mucus in the larynx itself. The sound, then, is only seemingly produced in the larynx, for on applying the stethoscope immediately under or just above the clavicles, it will be discovered to proceed from the apex of one or the other lung, which will be found the seat of inflammatory action. It would seem that the sound there produced in the pulmonary vesicles must be conveyed by the larger bronchial ramifications, numerous and superficial at this point, to the larynx, where, in consequence of the thinness of the tube, or rather the thinness of its covering, and its proximity to the surface, the deceptive impression of its production in this organ, from the presence of a small quantity of viscid mucus, is created.

It is the indifference of the patient to the presence of the sound, but still more especially its *persistence*, which constitutes its peculiar and distinctive feature, and upon which its value as an evidence of pneumonia commencing at the apex of the lung depends. In other affections of the lungs and air-passages, more especially in bronchitis, we may have a somewhat similar sound produced in the larynx itself, by the play of the passing air through a small quantity of viscid mucus there collected; but under such circumstances it is removable by coughing, or an effort to expectorate, and once removed may not return again, or only after a considerable interval, when a fresh collection of mucus has taken place. The patient, too, does not manifest the same indifference in regard to its presence, but the mucus producing it soon excites an effort for its removal.

As pneumonic inflammation, in the greater number of cases, commences at the base of the lung, the inexperienced stethoscopist, on observing the general symptoms of pneumonia present, may neglect to apply his instrument over the apex of the organ in attempting to discover the location and extent of the disease, and failing to detect any physical evidences of morbid action near the base, might at once attribute the symptoms present to inflammation, somewhat circumscribed, of the central portion of the pulmonary texture; too limited in extent, and too remote from the surface to give rise to the peculiar physical phenomena. To be sure, were he to examine the entire chest, the disease would be detected. The recollection of the sign above named leads at once to its locality.

[This sign we have noticed, on several occasions, in phthisical patients. We do not recollect that we have observed it in any other pulmonary affection. The sound of the same character, which is alluded to by Dr. Boling, is evidently produced in one of the larger bronchial tubes, and consists rather of a prolonged series of "clicks," than of a distinct crepitation. Experience has led us to be prepared to find tubercular softening, when we have met with this sound previous to auscultation.]

#### ART. 17.—*On the Treatment of Pneumonia.*

By M. TESSIER, Physician to the Hôtel-Dieu, Annexe.

(*Revue Médico-Chirurg.*, Août, 1847.)

[The paper of which we here give an abstract, is the continuation of one in which the author has investigated the value of an exclusive treatment of pneumonia by bleeding, by tartar emetic, &c. In that portion of his writings he decides

justly that any exclusive method of treating the disease is unscientific and unsuccessful, and he now inquires into the value of what he calls the *co-ordinate* system, or that which includes a series of different means adapted to the different phases of the disease. Of this series the first remedy treated of is blood-letting, which, as will be seen, he recommends to be performed repeatedly, and in small quantities. This is a proceeding at variance with British practice, and one which, in the majority of inflammatory diseases, we should unhesitatingly condemn; but it must be recollected that, in the treatment of inflammation of the lungs, our object is not so much to "knock down the inflammation," as is the common parlance, but to diminish the quantity of blood circulating through the organs, whose capacity is diminished by disease, and thus to prevent the additional evil of the circulation of imperfectly arterialized blood. This object we have long considered to be accomplished with the least risk of prostrating the vital powers (an effect specially to be avoided in pneumonia) by small bleedings repeated at short intervals. We are pleased, therefore, to find that our ideas have received the support of a well-observed series of a hundred cases which form the basis of the author's remarks. We do not, by this statement, intend to admit our perfect accordance with the author's mode of treatment; on the contrary, we consider his endeavour to master the disease by blood-letting alone during the first few days, and his resorting to antimony only when he finds the inefficacy of bleeding *per se*, as bad practice. The usual plan followed in this country of giving antimony with calomel from the first is, of course, the one preferred by us. Though disagreeing with the author on this point, we regard his observations as calculated to be of service by calling our attention more directly to the indications afforded by the progress of the disease and its variations day by day. Respecting blood-letting the author speaks as follows:]

The value of small bleedings of eight or ten ounces at short intervals cannot be too strongly urged. It appears to be the true method of employing this remedy, and the objections are purely theoretical. Of course the number of bleedings is to be proportioned to the general strength of the patient, but it is better, in pneumonia, to bleed once more than is necessary than to omit one useful bleeding. There are many practitioners who think that by this mode of bleeding we plunge the patient into a state of anemia, and render his convalescence tedious. This is the opinion of a class of men who guess instead of observing.

Sometimes it happens that the indications for bleeding are obscure, either from the mildness of the symptoms or from the vital depression of the patient. In the first case blood may be taken without hesitation; but in the second certain precautions are to be observed. In this case, we recommend a very small exploratory blood-letting; if it is beneficial we bleed again in a few hours. If the second bleeding does not produce a proportionate amendment, we stimulate the patient by hot diluent drinks and sinapisms: if by this means reaction is established, we bleed again. We have seen a patient, who at first ill bore the abstraction of four ounces, subsequently bear with benefit four or even five bleedings of the same quantity.

[The author admits that this system will not succeed in old men or in children, nor indeed in all cases of adults. When no relief follows the abstraction of blood, but the inflammation proceeds in spite of it to the stage of hepatization, when urgent dyspnoea ensues, he protests against its further employment as injurious. In this case he is guided by the stage of the disease. He thus explains himself:]

We have observed that in pneumonia, there is a distinct remission on the seventh day, which is, *par excellence*, a critical day; and if the patient does not improve on that day the prognosis becomes more serious. Our object, therefore, must be to induce a crisis on this day. According as the antiphlogistic treatment has been begun on the first, the third, or the fifth day, we have so much more or less time before us from the moment at which we have discovered the inability of blood-letting, to the seventh day, when the ultimate result of the case is in most cases decided.

Suppose we have arrived at the sixth day of the disease without making any impression upon it by bleeding, the best plan then is to apply a large blister over the affected side, and to exhibit hot fluids in large quantities, and by this means induce copious perspiration. If this occurs, our purpose is gained. If the resolu-



tion of the hepatized lung be not complete at the end of forty-eight hours from this time, a few doses of tartar emetic will in general dissipate all traces of inflammation.

It does not, however, follow that the case is lost if it is not amended on the seventh day. Resolution may occur on the ninth, the eleventh, or the fourteenth day. During this interval the position of the medical attendant varies accordingly as the symptoms decrease, or the inflammation merges to the third stage, or that of suppuration. In the latter case, though not invariably, the disease is generally fatal.

[The author states that he has never seen an instance of recovery from pneumonia after suppuration. The treatment recommended by him is ipecacuanha in small doses, quinine, and musk. If the lung remains in the first stage at the end of seven days, he regards the case as a mild one. There is a time at which some patients, during convalescence, exhibit symptoms which might be taken for a relapse. On this subject the author remarks:]

We cannot be too much on our guard; these symptoms (pain in the side, dyspnœa, &c.) are sometimes taken for a relapse, and the patient is bled. I have seen many such thrown by this into fatal collapse. For this reason I would insist on the danger of blood-letting in *carnification* of the lung. The proper treatment, in these cases, is to give ipecacuanha in small doses, and blistering.

ART. 18.—*On the Powers of Strychnine in the Cure of Chronic Bronchitis.*

By Dr. P. H. CLARKE, of Port Washington, W. T.

The author relates in this paper several cases of what he considers to be chronic bronchitis cured by the administration of strychnia.

"Having been afflicted," he says, "a great number of years with bronchitis, and finding no medicines which gave me relief, I was induced to try the effect of strychnine, which resulted in a perfect cure. My symptoms, when I commenced using it, were emaciation, night-sweats, and continued mucous expectoration, attended with cough, at times very severe, after which the muscles of the larynx were so completely relaxed that I could not utter a sound above a whisper, but unattended with pain. I commenced the use of the strychnine, as advised, by taking one-twentieth of a grain suspended in mucilage, three times a day, and increased the dose every third day until I took one-fifth of a grain. I used the remedy about four weeks, and have never experienced any difficulty since. I was much astonished at its results, and more especially at the effects it produced upon the contractility of the muscles of the larynx, as well as upon the muscles of the extremities."

That the strychnia should be beneficial in restoring the voice, in cases in which its loss results from deficiency of power in the muscles of the larynx, is in strict accordance with its known action, and need not excite surprise. As a tonic it may, also, *indirectly* aid in the relief of chronic bronchitis, but that it possesses any direct action in the cure of that disease is, to say the least, problematical.

*Illinois and Indiana Med. and Surg. Journal*, April and May, 1847.

ART. 19.—*Galvanism in Aphonia.*—The following is a description of one of the earliest modes of applying galvanic action to the treatment of disease, and, on account of the long continuance of its effects, is thought by Mr. Donovan to hold out considerable advantages. In the case of a young lady, affected four years with hoarseness, and more or less complete aphonia, blisters, mercurials, &c., had been used, without any relief. Her physician, Dr. Grapengiesser, then thought of increasing the action of blisters by galvanism, and accordingly, having vesicated each side of the larynx to the size of a shilling, he covered the excoriated spots on one side with a zinc plate, to which a wire of the same metal was attached, and on the other with a piece of silver. As soon as he brought the two plates in contact, a burning sensation at those spots arose, and the larynx heaved up and down convulsively, with loud sobbing. On alternately breaking and rejoining the contact, these motions became so violent as to be almost insupportable. After this process had been continued for a quarter of an hour, a watery humour began to run from the excoriated surfaces. The apparatus was removed, and towards

evening she began to speak more audibly, and the improvement continued next day, but was lost again on the fourth or fifth day. The process was then repeated with the same results, and the apparatus was left on all night, with the effect of permanently restoring the voice.

*Dublin Quart. Journ.*, Feb., 1847.

ART. 20.—*Treatment of Coryza*.—M. Deschamps states that he succeeds in suspending a common cold, if taken at the onset, by injecting into the nostrils a weak solution of the extract of opium. The liquid may be either thrown up with a syringe, or alternately snuffed up each nostril, the other being closed with the finger.

*Journ. de Chirurgie*, April, 1847.

#### SECT. IV.—DISEASES OF THE CIRCULATORY SYSTEM.

ART. 21.—*Case of Double Aorta, with Aneurismal Dilatation of one Division.*

(*Lancet*, Sept. 4, 1847.)

[The following singular case was recently read by M. Bouillaud, and is probably unique.]

The patient, a stout man, was of pallid complexion; the subcutaneous veins of the extremities were prominent: no œdema or ascites; respiratory murmur good; the cardiac region presented no prominence; the heart's motions were visible externally; the apex impinged upon the sixth intercostal space, to the left of a vertical line drawn through the left mamma; precordial dullness over a space of five inches and a half vertically: a double movement corresponding to the systole and diastole was perceived in this region: the heart's impulse was evidently augmented; the normal sound was obscured by a double bellows-sound, the second sound being the most audible.

The right side of the chest presented a distinct prominence, which was dull on percussion, and also exhibited a double movement isochronous with the heart's action. Over the same spot a very strong souffle, large, diffuse, and rough, prevailed, but without any clicking sound, which arose no doubt in the aorta. The hand also perceived a vibratile tremor, isochronous with the diastole of the aorta. A similar tremor was noticed over the arch of the aorta, at the top of the sternum, where there was a prominence. The tremor was still more distinct beneath the clavicles. The subcutaneous veins of the thoracic region were abnormally developed, chiefly on the right side. M. Bouillaud's diagnosis was—hypertrophy of the heart; dilatation of the ascending aorta, with cretaceous deposit.

No change in the patient took place for the space of two or three months, when he was seized with cough, with dry crepitation and dyspnœa, for which he was bled, with relief. A blister was also applied, which caused strangury with albuminous urine. The latter symptoms continued, and œdema was observed about the ankles; the chest symptoms increased, and the man died.

*Post-mortem*.—*Thorax*. Numerous adhesions at the posterior part of each lung. Lungs congested, and pushed out of their place by the enlarged heart and dilated aorta. Heart very large, apex obtuse, and pushed to the left. It was generally hypertrophied; weighed twenty ounces; the cavity of the left ventricle was very dilated, so that it would hold an egg; a little below the aortic orifice the thickness of the wall was four-fifths of an inch, at the apex two-fifths; the aortic orifice quite unobstructed, very ample, had an interior circumference of about four inches and a half; the valves large, generally thickened and hypertrophied, but otherwise well formed and sufficient; the mitral valve was also hypertrophied, but otherwise perfect; the cavity of the right ventricle was also enlarged, but to a less degree than the left; the valves large, but otherwise normal; both auricles were enlarged and hypertrophied. As soon as the chest was opened, the large dilated aorta presented itself; but great was the surprise when on opening it, and tracing it to its origin from the ventricle, a second vessel was observed to spring from that cavity, which was soon found to be applied by its back, as it were, to

that of the other, and the two having a common partition. These two aortæ, or these two divisions of one and the same aorta, have the same length, but not the same diameter. The larger arises from the right, the smaller from the left part of the left ventricle. From their origin they run, one seated behind the other, to a point opposite the last lumbar vertebra, where they terminate—the larger in the right common iliac, the smaller in the left common iliac. In the sternal portion, the larger vessel partially conceals the smaller, which lies behind it. In their descending course, the larger artery is placed to the right, and a little posterior to the smaller; the smaller to the left, and a little in advance of the former. The septum which thus divides the aorta commences on a level with the aortic valves. At that point it presents itself in the form of a diaphragm, pierced on the right by an annular opening of about an inch in diameter, and this opening appertains to the larger aorta, which is dilated at its origin, as will be presently noticed. The left aorta, at its commencement, presents an infundibuliform cavity, which becomes constricted about one inch and a half above, where it is continuous with the ventricular cavity. Between the double opening, which is observed at the origin of the inner aortic dissepiment and the single orifice of the left ventricle, there exists a sort of pouch, which the blood from the ventricle must traverse, in order to enter the two openings of the aortæ above. Of the three valves of the aortic orifice, one was common to the two aortæ, the two others belonged respectively, one to the right, the other to the left vessel. The inter-aortic partition, in its descending portion, is pierced by several small, round, or lenticular openings, which establish a communication between the two aortæ; these orifices are more numerous in the lower part of the septum, down to the commencement of the iliac vessels, than above. Just above the common iliacs, the septum offers a much larger opening than elsewhere, having the greatest resemblance to the unobliterated foramen ovale; its diameter is two-fifths of an inch, and, like the foramen mentioned, is furnished with a sort of valvular fold with a thin margin.

The brachio-cephalic trunk, the left carotid, the intercostal and lumbar arteries, the cæliac and mesenteric arteries, superior and inferior, are furnished exclusively by the lesser aorta. The left subclavian arises from both the larger and smaller vessel, so that, like the aorta itself, it is double or bifid; and between its two parts a partition is found, resembling that of the aortæ. Of the coronary and renal arteries, one is furnished by the greater, the other by the lesser aorta.

At the corresponding points of origin of the brachio-cephalic trunk, of the left carotid, of the cæliac trunk, and of the mesenteric arteries, the larger vessel gives off no branch, but presents short cul-de-sacs, as vestiges or rudiments of the arteries they by their position represent. Excepting where it is unusually dilated, the interior circumference of the large vessel was about two inches and a half. At its origin, it has been noticed that the small vessel was dilated like a funnel, where its circumference was three inches and three fifths, but only two inches at the point where the brachio-cephalic was given off; and again, three inches and three fifths at an enlargement of its transverse portion; one inch and three fifths in its descending thoracic, and from one inch and two fifths to one inch and three fifths in its abdominal portion. The inner circumference of the brachio-cephalic is one inch and one fifth; that of the left carotid, four fifths of an inch; of the common iliac, from the large aorta, one inch and four fifths—from the small vessel, one inch and two fifths.

It has been noticed that the greater vessel, immediately after its origin, was the seat of an enormous dilatation, which inclined over to the right side of the chest, occupying the space indicated by the dullness on percussion. The volume of the tumour may be represented as of the size of a turkey's egg. Within it were recent clots of blood, not adherent. The walls were composed of the three normal coats, rather thickened than the contrary, notwithstanding their dilatation. The circumference of the tumour within was from five inches and one fifth to five inches and three fifths. This dilated portion, however, became suddenly constricted at the point whence it took its transverse course, but presently dilated again into another tumour of the size of a hen's egg, with its walls composed of the three usual coats. After this the artery preserved a uniform calibre; but throughout its course it is the seat of a calcareous or cretaceous degeneration, so to speak, confluent; and its internal surface is uneven and rough. The calcareous



lamellæ are the closest in its transverse portion, where it contributes to form the left subclavian. Nevertheless, this diseased condition disappeared for a little distance from that point. The portion contributed by this larger aorta to the left subclavian, was, like itself, degenerated.

The small aorta was not affected like the larger, nor the arteries given off from it. On its internal lining a few yellow spots were seen, standing out slightly in relief. Further, for about two inches and a half, between the sixth and eighth intercostal artery, a kind of prominent lamina, unequal and rough, and of a fleshy appearance, was observable (the fibres distinguishable had a longitudinal direction). Throughout the extent of this lamella, the walls of the aorta had a greater thickness than elsewhere, where the internal coat of the artery was even, smooth, and polished. In that portion of the small aorta, extending from its origin to its curvature, some rugosities are met with, of a fibrous or fibro-cartilaginous character, but not having any calcareous scale, properly so called. We must add, that at the point of the curvature of this lesser aorta, there was a sacciform dilatation, applied by its back to the dilatation of the transverse portion of the larger vessel mentioned above.

To terminate what relates to the state of the vascular system, it may be noticed, that the venæ cavæ, superior and inferior, the jugular and subclavian veins, and all the abdominal venous system, were distended with very dark blood, in part coagulated, or simply in broken clots. In the peritoneal cavity a considerable quantity of serum was found; the stomach and intestines appeared healthy; the kidneys seemed a little too large, and were rather red; their capsule was opaque at points, and strongly adherent to the cortical substance. The lining of the pelvis of the kidneys was a little thickened and injected. Nothing particular was seen in the head, save an abundance of serum, and a feeble consistence of the cerebral matter.

#### ART. 22.—*On Pericarditis.* By M. DE BARTOLOMÈ, M. D.

(*Prov. Med. and Surg. Journal*, May 5, 1847.)

[The author commences the essay of which we give an abstract by criticising the definition of the disease as "inflammation of the serous membrane of the heart," and stating it to be his opinion that the fibrous structure of the sac is, in many instances, the first to take on inflammatory action. That it should be so, he regards as a necessary consequence of the connection between the disease and rheumatism, and the identity of tissue composing the pericardium and that of the fibrous portions of the joints. After some further remarks on the rheumatic origin of pericarditis, he enters upon the following general description of the disease.]

*Morbid Anatomy.* After the inflammation has attacked the serous pericardium, the morbid alterations it produces may be described according to the four following heads: Redness and vascularity of the membrane; effusion; formation of false membranes; and their conversion into cellular tissue, fibro-cartilage, bone, &c. But I must confess that I am at a loss how to describe what I consider to be the first stage of the disease—namely, that in which the fibrous pericardium alone is affected; for, as the fibrous tissue in the neighbourhood of joints does not present after rheumatism any pathological appearances, except in a few protracted and very severe cases, we cannot expect to find any morbid alterations in the pericardium when the disease has existed in its fibrous layer only. Thus it happens, as Laennec assures us, that in many instances he could find no trace whatever of the disease, although, from the symptoms which had characterized it, he was persuaded that it had been the only cause of the patient's dissolution. In all such cases I am convinced that the inflammation had existed only in the fibrous pericardium, and had produced its fatal effects by the impediment which it must have offered to the free action of the heart. The case already alluded to, as described by Laennec, seems clearly to have been one of this description.

The redness over the pericardium is seldom uniform: sometimes it assumes an arborescent appearance, but most commonly shows itself in small patches, or dots, alternating with the natural colour of the membrane. This alteration of colour is not invariably present after pericarditis, for Laennec found in some cases, that although the symptoms during life, and the thickness of the false membranes,

indicated the inflammation to have been very severe, yet on the most attentive examination he could discover no redness whatever. Although some have asserted that the redness may have disappeared after death, as it does from the surface of persons who have died of erysipelas, yet I think that the experiments of M. Scoutetten go far to prove that inflammation of a serous membrane will invariably exhibit increased redness after death.

The effect of inflammation, in almost all textures of the body, is the effusion or exudation of a particular morbid secretion. In pericarditis it generally consists of coagulable lymph, accompanied by more or less serum. When only lymph and serum are effused, the latter sometimes exceeds the former in quantity. The effused lymph forms a membranous covering, more or less perfect, on the surface of the pericardium, and according to Laennec, rarely presents the equable surface peculiar to the membranes formed during pleurisy, but, on the contrary, it is pitted, mammillated, and rough. The pericardium, whatever changes may be going on within it, is very rarely thickened, the membranes having been sometimes, according to Dr. Hope and M. Bouillaud, confounded with thickening of the pericardium itself.

*Diagnosis.* The diagnosis is not always easy. The disease has been mistaken by some of the best practitioners for affections of other organs, which, on dissection, have been found perfectly healthy. Laennec assures us that he often found on dissection all the evidences of the existence of pericarditis, when nothing had occurred during the life of the patient to excite the slightest suspicion that such a disease was present; and again, that frequently he could find no trace whatever of the disease, when he was sure that it had been the only cause of the patient's dissolution; and he observes that pericarditis is a disorder, the existence of which, during the life of the patient, the most able physicians rather guess at than recognise. Dr. Latham mentions two cases in which the disease was mistaken for disease of the brain, and treated accordingly, but dissection proved them to have been cases of pericarditis. Andral and Corvisart mention two similar cases; the latter was of opinion that the cases where diagnosis was most obscure, were always complicated with pleurisy, pneumonia, or some other diseases of the thoracic viscera.

In opposition to this statement may be quoted Laennec, who says that the most complete latent affections he has met with were in patients whose thoracic viscera were in other respects quite sound, and who had died of disease of the abdomen.

The pulse at the commencement, that is, when the fibrous membrane alone is affected, will generally be found to be that of acute rheumatism, but will vary in proportion as the serous membrane becomes affected; and it is owing to this that the pulse of pericarditis is so different in different subjects, and so variable throughout the course of any particular case. We cannot therefore form our diagnosis by the pulse alone, as it may derive its particular character in some cases not so much from the affection of the pericardium, as from rheumatism in other parts of the body on the one hand, or from inflammation of some other serous membrane on the other.

All authors seem to agree that the most unequivocal sign is the presence of pain over the region of the heart, particularly if aggravated by pressure, in whatever way excited,—whether by full inspirations, change of position, or artificially. This latter circumstance has been known to aggravate it so intensely as to have caused a fit of syncope. "The pain," says Dr. Hughes, "which according to my experience is a constant attendant upon rheumatic inflammation of the pericardium, is fairly explicable by the inflammatory rheumatic affection of the fibrous external covering to the serous membrane, the fibrous tissue being the natural seat of rheumatism, of which pain is the most common, if not the universal symptom."

It is frequently difficult to form a correct diagnosis of this disease. Inflammation of some other thoracic viscus may be readily mistaken for it; and by pressure, should it be applied, we shall excite pain, whether the heart or some other organ within the cavity of the chest be affected. Should this be the case, we must mainly trust to the symptoms elicited by auscultation and percussion, which will generally be sufficient to guide us; but in some obscure cases we shall have only negative symptoms to guide us, and we must then decide upon the nature of the

case by the absence of such symptoms as characterize disease of the other thoracic viscera.

[*Physical signs.* The author's account of the physical signs of pericarditis is not sufficiently perfect to warrant our transferring it to our pages; we shall therefore omit this, and proceed to his description of the treatment.]

*Treatment.* The list of remedies which can be employed for the cure of pericarditis with decided advantage is rather limited. The abstraction of blood generally ranks foremost, and venesection seems to be preferred; yet I think that this mode of abstracting blood is far from being absolutely necessary, and that, in the majority of cases, topical bleeding is preferable: first, because it answers the same purpose as venesection; and, secondly, because it does not produce that distressing debility, and the violent reaction so injurious when the lining membrane of the heart, and more particularly when the valves are affected.

That topical bleeding is in itself often sufficient, is clearly shown by Dr. Hope, who assures us that he has seen a single prompt and abundant application of leeches, or a cupping, at once subdue every formidable symptom. Dr. Alison says that, in rheumatic pericarditis, general blood-letting is not advisable. I do not mean to say that I would in no case employ general bleeding, but merely that I would not do so on every occasion; for, unless the symptoms are very urgent, I consider topical bleeding as preferable. In cases where they are very pressing I would bleed, but not to a large extent at first, and then trust to cupping and leeches. If the pain and action of the heart are not subdued by the first topical bleeding, it should be repeated, but sometimes, as already stated, such repetition is unnecessary. Next to bleeding I would rank severe counter-irritation. Colchicum, digitalis, and antimonials I have repeatedly employed with advantage, as also mercury.

[It appears to us, from the above account of his treatment of the disease, that the author's practical acquaintance with it cannot be very extensive; we agree with him in one point, that general bleeding has not the power over the inflammation which it exerts when other serous membranes are affected, but we are entirely at variance with him respecting the slight estimation in which he holds mercury; we are well assured that, in a case of pericarditis, whether of rheumatic origin or not, the action of mercury is absolutely necessary; although without its assistance we may possibly save life, we shall only do so at the risk of leaving permanent unsoundness of the heart, with its slowly, but surely fatal results. A far better account of the most approved practice will be found in the next article, in which the above paper is criticised by Dr. Shearman.]

#### ART. 23.—*Treatment of Pericarditis.* By Dr. SHEARMAN, Rotherham.

(*Provincial Med. and Surg. Journal*, June 2, 1847.)

Dr. Latham, in 1847, says, "In foreign practice no mercury is used from first to last, but all the power of common antiphlogistic remedies is brought to bear upon the disease, and thus its symptoms are mitigated or subdued, yet they return again and again, and are again and again mitigated or subdued, and so the patients are kept alive for a week or ten days, and then they die, in the great majority of cases."

M. Bouilland's treatment of pericarditis is of this antiphlogistic description; he never uses mercury; and, in his treatise on it, he says almost every case is found on dissection to have the pericardium adherent. In inflammation of the pericardium, the products, or exudation of the inflammatory action, are deposited in a shut sac. There is not only congestion, great nervous and vascular irritation, and determination of blood, with their usual consequences, but a large quantity of lymph and fibrin are exuded, which, so far as I know of the remedies for inflammation, can only be checked, stopped, or absorbed during the time the system is under the specific influence of mercury.

Bleeding, both general and local, is undoubtedly invaluable, and ought to be carried to such an extent as to cut off the supply of a certain quantity of blood to the part, and decrease the quantity of fibrin in the blood. Purging to a certain extent is necessary; but that will not absorb either the serum or lymph. Opium is of the greatest benefit, by soothing the excessive irritability of the nervous and vascular excitement, and relieving pain; and counter-irritation, particularly blister-



ing, is invaluable, by exciting the action of the absorbents near the seat of the lesion, and in that way relieving the distension of the vessels. But all these remedies combined will not prevent a case of pericarditis making progress to that stage which ends in adhesion and premature death.

I have carefully examined the works of Stokes, C. J. B. Williams, Watson, Elliotson, Hope, Copland, Joy, and Latham, and I find my opinions borne out by all of them. I am convinced that mercury has the power of doing something more in inflammation of the pericardium than venesection and other antiphlogistic remedies can do; and that upon this something being done the life of the patient often depends.

Dr. Taylor, one of the physicians to University College Hospital, has published in the "*Lancet*" forty cases of pericarditis which he has treated in the hospital under the constant inspection of the pupils. I have read them all, and he has never once omitted to do all in his power to bring the patients under the specific influence of mercury; where he has failed to do so his patients have died, but where he has succeeded, his patients have generally recovered. These cases are worth reading, being written by one whose knowledge of the disease is more extensive than that of most authors.

In *iritis* the influence of mercury is quite visible in removing effused lymph, and it thus obviously promotes absorption, as well as prevents effusion. In syphilitic ulcers, mercury soon removes the callous indolent margin. I have heard an opinion canvassed, that mercury destroys the red particles of the blood, and produces a disposition to erythematic inflammation, which is incompatible with healthy or plastic. But, if this be true, how can healthy lymph be thrown out, and granulations formed, in such numerous instances under its influence as we are constantly in the habit of observing? It is more probable that the specific action of mercury changes the condition of the blood, and diminishes the quantity of fibrin and white corpuscles, as we find mercury most useful when the blood is buffed, and in serous and fibrinous inflammations, where effusions take place to a great extent.

Dr. Latham says, "my experience tells me that whenever the exocardial murmur has ceased early, salivation has first taken place." And, in the relation of the events of the ninety cases, there were *two* in which he could not produce the specific action of mercury. These two died, and only one more. In another place, he says, "not in a single instance did the exocardial murmur cease to be audible until salivation appeared."

Again he says, "In English practice mercury is given from first to last, but it is for a time as if it were not given at all, for it produces no sensible effect. Common antiphlogistic remedies, however, are able again and again to mitigate and subdue symptoms; and so, at the end of a week or ten days, the patients are still alive, yet they are ready to die; but, in a great majority of cases, they do not die. Salivation arrives late, and seems to save them!"

Colechicum, tartarized antimony, and aconite ought to be mentioned as remedies which occasionally very much allay the excessive action of the nervous and vascular system. They require caution and judgment in administration, perhaps more so than those before mentioned.

In my own practice I have been in the habit of treating these cases by general bleeding to a certain extent, followed by cupping, leeches, and blisters; but I have placed my chief dependence upon well-regulated doses of calomel and opium, and frequent frictions with strong mercurial ointment, until pytalism is produced.

#### ART. 24.—*On the Causes of Cyanosis.* By NORMAN CHEYERS, M.D.

(*Medical Gazette*, March, 1847.)

[The following extract from an elaborate essay by the author upon the Morbid Conditions of the Pulmonary Artery, is taken as being particularly worthy of attention.

The paroxysms of suffocative dyspnoea, the lividity of the surface, and all the other distressing symptoms which constitute the leading features of cyanosis, were formerly attributed solely to the admixture of venous with arterial blood through the abnormal cardiac apertures which are usually discovered in these

cases, and to the consequent diffusion of a dark and vitiated fluid through every part of the arterial system; but this opinion has been in great measure abandoned since the facts have been established that the symptoms in question may be present in cases where no abnormal communication whatever exists between the cavities of the heart, as well as in instances where it is utterly impossible that the smallest quantity of venous blood could have entered the arterial system; while, on the other hand, the symptoms of morbus cæruleus are not by any means necessary attendants either of patency of the cardiac septa or of permanence of the arterial duct.

The opinion at present adopted by many pathologists with regard to the cause of the symptoms of morbus cæruleus is, that they depend entirely upon delay to the passage of the blood through the lungs, resulting from the presence of a fixed impediment to the circulation.

Morgagni appears to have been the first writer who attributed the intense lividity of cyanosis to obstruction in the trunk of the pulmonary artery. Louis ascribed this symptom to some obstacle to the circulation of the blood through the veins; and MM. Bertin and Bérard coincide in believing that the blue appearance of the surface in those affected with abnormal apertures in the cardiac septa depends on the stasis of the blood in the right cavities of the heart, and upon the consequent difficulty with which the venous blood circulates; and though it be complicated almost always with the mixture of the two kinds of blood, still it is not produced by this mixture. The opinion that cyanosis is exclusively due to the circulation of venous blood through the arterial system has been satisfactorily disproved by Dr. Stillé, who adduces ample evidence in proof of the conclusions: 1. That cyanosis may exist without admixture of the blood. 2. That there is not always a proportion between cyanosis and the degree in which the blood is mixed. 3. That complete admixture of the blood may take place without cyanosis; and 4. That cyanosis depends upon congestion of the general venous system from obstruction in the right side of the heart or in the pulmonary artery, impeding the return of its blood to the lungs.

The results of Dr. Chevers' investigations are almost entirely confirmatory of Dr. Stillé's inferences. Cases of cyanosis will very rarely occur in which the morbid anatomist will fail to discover some organic cause which acts virtually as an impediment to the pulmonary circulation. Dr. Stillé has, perhaps, referred somewhat too exclusively to the right side of the heart and the pulmonary artery as the seats of the mechanical obstacle to the circulation in these cases, for it will occasionally, though rarely, be found that the physical impediment to the circulation exists in the pulmonary tissue, or is even external to the lungs, as in Dr. Marcet's well-known case; and, in some few instances, the cause of obstruction is situated either in the left heart or in the aorta. Still, in every case of cyanosis, there will be found to exist some cause or other which tends essentially to prevent the free and complete circulation of the blood through the lungs, to retard its passage through the venous system, and, consequently, to render the process of its arterialization slow and incomplete.

Dr. Stillé has also argued that obstruction to the pulmonary artery is never found without the concurrence of cyanosis. This is considered by the author to be perfectly true as regards most of the cases of congenital narrowing of this vessel, but it does not hold good in all; for instance, where congenital imperfection of the pulmonary valves does not become seriously obstructive until late in life, the symptoms which it produces are not necessarily those of cyanosis; and he cites an instance in which extreme narrowing of the pulmonary orifice, the result of endocarditis occurring at the adult period, was not attended with the slightest appearance of lividity of the surface; in fact, it appears that, for the complete establishment of that generally dilated condition of the entire venous system which attends cyanosis, the obstruction to the circulation must have been present either at or before birth, when the capillary vessels are naturally more capacious than they are in the adult, or it must become confirmed previously to the full development of the body, while the entire vascular system is pliant and dilatable, and is still capable of readily adapting itself to permanent changes in the circulation.

It is, of course, well known that various kinds of obstructive disease of the heart and lungs, occurring in adult life, are liable to produce extreme internal

venous congestion, and considerable lividity of the surface; but the author is not acquainted with any instance in which an impediment of this kind, coming into operation subsequently to the age of twenty-five years, has produced that general and intense blueness of the entire surface which forms the characteristic feature of true cyanosis, depending upon congenital malformation of the heart.

In extreme cases of original defect of the cardiac apparatus, such as those in which the ascending pulmonary trunk is obliterated or absent, the cyanosis appears to be due less to the circuitousness of the course by which the lungs are supplied with blood, than to the unnatural narrowness of the pulmonary vessels, which are almost invariably far less capacious than in the ordinary condition; hence the pulmonary veins and left auricle are usually more or less contracted in these cases, while the lungs are either badly developed and imperfectly expanded, or present the evidences of chronic impediment in the dilated condition of their tubes.

There are still a few pathologists who adhere to the old opinion that cyanosis mainly depends upon the circulation of carbonized blood through the arterial system, insisting upon the fact that, in the great majority of cases of morbus caruleus, the septa of the heart are more or less deficient. As Dr. Chevers has already stated, it is now established that cyanosis may exist quite independently of imperfection of the cardiac partitions, or of admixture of the venous and arterial blood; still, he apprehends that M. Bérard and Dr. Stillé have argued somewhat too exclusively in maintaining that admixture of the two currents has no influence whatever in producing cyanosis, as it appears to him by no means unreasonable to conclude that, in extreme cases of this kind, where the impediment to the pulmonary circulation is great, and where a large quantity of venous blood evidently passes into the aorta at every systole of the ventricles, the discoloration of the surface, and especially the lividity of the mucous membranes, which is so frequently observed in these cases, is, in part, at least, due to the dark hue and impure condition of the arterial blood. Admitting this, it must be borne in mind that the principal reason why cyanosis is generally present in cases of extensive communication between the cavities of the heart, will be found in the fact that a cause of obstruction which is capable of preventing the natural closure of the septa will rarely fail to occasion permanent and severe impediment to the circulation. Where an abnormal opening is discovered in the cardiac apparatus of one who has only lately become cyanosed, or where such an aperture presents traces of recent enlargement, it must not be at once concluded that the presence or augmentation of this communication has occasioned cyanosis; but the first cause of the disease must be sought for, and this will generally be discovered in the form of some manifest impediment to the circulation, which has determined the patency of the opening from birth, and which, having become recently aggravated, has produced the cyanosis at the same time that it has increased the size of the abnormal foramen.

Dr. Meigs adheres to the doctrine that persistence of the foramen ovale is the cause of cyanosis in infants. He observes, that, "as the occlusion of the foramen ovale is prevented by the torrent of blood flowing from the inferior vena cava, raising and keeping raised the interauricular valve, which is thin and floating, it occurred to him to place the cyanosed child on the *right* side, with the head and trunk somewhat raised, so that the interauricular septum should be maintained horizontal, and the blood contained in the left auricle should press with its whole weight on the closed valve. He has frequently seen the blue colour disappear at the very instant the infant was placed in this position, proving that the oxygenating blood only entered the arteries." Dr. Meigs adds, that he has thus saved the lives of fifty or sixty children in a hundred; whereas, as is well known, all the other means hitherto tried have failed.

Successful as this application of Dr. Meigs' theory has evidently proved, it is certain, according to the author, that his explanation of the fact is by no means demonstrative. So far from patency of the foramen ovale being an essential concomitant of the blue disease, it is well known that, in a very considerable proportion of instances of cyanosis, the auricular septum is perfectly closed; and two cases are upon record in which cyanosis was distinctly attributable to closure *ante partum* of the foramen of Botal. Wherever this communication remains too long open in a child, there must exist some cause, either of obstruction to the circula-



tion, or of over-distension of the heart, to prevent its closure; and it is to that cause, and not simply to the patency of the auricular septum, that the cyanosis is due; otherwise it is clear that every infant would remain cyanosed until the termination of the usual period at which the foramen becomes naturally closed, and every individual whose auricular septum remained imperfect would be the subject of *morbus cæruleus*,—neither of which circumstances is found to obtain. The position of the body recommended by Dr. Meigs is, however, well calculated to relieve those paroxysms from which the subjects of congenital heart disease suffer, as it places nearly the whole of the voluntary muscles in a state of relaxation, thereby rendering the circulation through the extreme vessels as free as possible, and (what is of still more importance) as it facilitates the supply of arterial blood to the lungs and to the brain.

Much unnecessary discussion has been expended upon the question, whether, in cases of septal deficiency, admixture of the venous with the arterial blood occurs constantly, or only as the result of occasional causes of impediment to the pulmonary or systemic circulation. In by far the larger proportion of instances of extensive congenital malformation of the heart, and certainly in all those cases where direct communication between the cavities or arteries exists as the result of a permanently obstructed state of any of the cardiac orifices or vessels, admixture of the two currents of blood is a matter of necessary occurrence—the sole means by which the circulation is maintained at all, and here the state of the parts shows at a glance in which direction the diverted current has been accustomed to pass. Thus, in cases of transposition of the aorta and pulmonary artery, where the ventricular septum and foramen ovale remain pervious, it is evident that blood must be continually passing directly from the right to the left ventricle, and from the left to the right auricle. In other instances, where the orifice of the pulmonary artery is closed, and the aorta arises from the right ventricle, it is apparent that the contents of the left cavities can only reach the aorta by passing from left to right through the aperture in the septum, which is always provided in these cases. So, also, in the majority of instances where the foramen ovale remains open, but protected by an efficient valve, it is clear that blood has traversed the aperture only from right to left. But in many cases of congenital malformation of the left cavities of the heart, it is evident that the current through the foramen has always been from left to right. In cases of patency of the *ductus arteriosus*, associated with contraction of the pulmonary orifice, the lungs, of course, receive some portion of their supply of blood through the duct from the aorta: but, where there exists a contracted or obliterated state of the aorta below the origin of the left subclavian, it not unfrequently happens that a considerable stream of blood is regularly conveyed by the duct from the pulmonary artery into the aorta. In the larger proportion of these cases it is impossible that the direction of the current should be permanently reversed: the foramen ovale is generally defended on one side by a more or less efficient valvular apparatus, and an analogous arrangement has occasionally been developed in patency of the ventricular septum and arterial duct.

It has been argued by M. Cloquet and Dr. Willis, that when the right and left cavities of the heart are of equal and proportionate strength, no admixture of the arterial and venous blood will occur during their contractions, even although there may exist free communication between the vessels, or through the septa. A few cases have been observed which go far to substantiate the general correctness of this doctrine; but the instances of extensive malformation of the heart are so few in which the two sets of cavities are exactly proportioned to each other, or in which the whole of the cardiac outlets are perfectly free from obstruction, that the rule is by no means one that admits of being either extensively or frequently applied.

It is now allowed by the majority of pathologists that, in itself, patency of the foramen ovale (where the opening, although free, is guarded by an efficient valve) is by no means necessarily attended with cyanosis; and it is probable that, where this exists as the principal defect in the cardiac apparatus, the passage of blood through the aperture is ordinarily by no means large, and that the transit of a full stream from one auricle to the other may be merely an occasional occurrence for the purpose of relieving distension under circumstances of accidental engorge-

ment or obstruction. Still it is doubtful whether we can fully admit the opinion of Bichat and Louis, that, "in examples of septal deficiency, or at least in cases of open foramen ovale, no admixture of venous with arterial blood occurs except under circumstances of obstruction;" for, as we have already seen, these deficiencies are seldom, if ever, present where there is not also discoverable some cause of permanent impediment to the circulation, which probably at all times occasions a certain degree of comminglement of the currents, although that mixture may not be sufficient to produce serious vitiation of the arterial blood. It is generally found that, when the subjects of the minor degrees of septal deficiency become affected either with pulmonary disease, or with any causes of delay to the systemic circulation, the dyspnoea and lividity of the countenance are greater, and the consummation of the fatal issue is usually more rapid than might have been expected from the extent of the recent pulmonary disease, or from the severity of the other superadded causes of obstruction, had these existed alone,—facts which go far to corroborate the belief that, in cases of permanence of the septal openings, there generally exists some fixed impediment to the circulation, although that impediment may not be sufficient to produce any visible ill consequences while the heart is tranquil, and the lungs remain free from congestion or other superadded lesion.

It is a demonstrable fact that there may constantly occur considerable commixture of venous with arterial blood, and yet the individuals may be well nourished and active, and may arrive at maturity without ordinarily presenting sufficient blueness of the surface to attract the attention even of a medical man.

In other instances of this kind the patients may continue for many years to enjoy tolerable health, being only occasionally liable to more or less lividity of the surface, either with or without a certain amount of dyspnoea, occurring in consequence of extraordinary exertion, repletion, or transient causes of pulmonary obstruction. Here the intensity of the cyanosis can never be taken as an indication of the degree of abnormal communication which exists between the cavities of the heart. Louis has very justly remarked, that "the change of colour is never found to be in proportion to the freedom of the communication;" for it is of course evident that, wherever obstruction of the outlets exists, the more freely the cavities communicate the less will the circulation be impeded.

In either of the above sets of cases the symptoms of *morbus cæruleus* may become permanently developed in their greatest intensity whenever additional and permanent obstruction occurs to the passage of the blood through the lungs, or immediately the muscular power of the heart becomes seriously impaired. Instances of considerable malformation of the heart occasionally occur in which cyanosis does not appear until the age of puberty, and others have been observed where the lividity of the surface, which had occasionally presented itself from birth, did not become permanent until a rather advanced period of life. In the former of this class of instances the increased impediment is probably due to a want of that development of the pulmonary apparatus which usually takes place at the approach of adult age; in the others it may be traced to additional narrowing or other consequences of acquired disease in the malformed structures, causes which are probably further aggravated by plethora, and by a certain amount of deterioration of the lungs.

Allusion has been already made to the influence of contraction of the foramen ovale and arterial duct in producing the first symptoms of *morbus cæruleus* in children who are the subjects of congenital cardiac defect; it does not usually appear that such defect necessarily interferes with the health of the infant so long as its system is freely supplied with placental blood; but so soon as respiration and the organic changes which accompany the commencement of that process become established, the malformed heart fails to perform with facility functions for which its structure very imperfectly adapts it, and the evidences of severe obstruction are quickly developed; these are, in all probability, also aggravated by the increased bulk of the fluids which is produced when the process of assimilation commences. The opinion advanced by M. Billard, that a perfectly oxygenated blood is not necessary to the new-born fetus, taken in conjunction with the fact, that the infant's body has usually a slightly livid appearance until the funis is secured and respiration is fully established, has been regarded as a sufficient explanation

of the circumstance that several hours or days frequently elapse after birth before the symptoms of the blue disease present themselves in those children whose hearts are structurally imperfect. The author is not, however, aware of any fact which proves that the blood supplied to the fœtus during intra-uterine life is less completely oxygenized than that which circulates through the arteries of the mother; and it is evident that the slight discoloration of the surface alluded to above is merely the transient result of the embarrassment and delay which the circulation necessarily sustains at the time when the infant is gasping in its first efforts to inspire.

ART 25.—*Sulphate of Quinine in Aneurism of the Aorta, and in other Internal Aneurisms.*—It appears that sulphate of quinine has been employed with much success in some Italian hospitals for the relief of aneurism of the aorta and other internal aneurisms. It belongs, in this use of it, to what are termed hyposthenics (subduing action), and is to be carried as far as the system will bear it. It has, say its Italian supporters, the immense advantage of bringing down the pulse without disturbing its rhythm, of making the buffy coat of the blood disappear, that is, of dissipating the organic condition.—namely, arteritis, on which it depends, and thus of retarding the progress of the aneurismal tumour. The other hyposthenics adapted to the same end, according to the same authorities, as by alternation with the sulphate of quinine, are the vegetable and mineral acids, the sulphate of iron, the ergot of rye, the cold ferruginous waters, the arsenious acid, the acetate of lead, and the iodide of potassium.

*Monthly Journal, July 1847.*

ART. 26.—*On Abdominal Pulsation.* By EDWARD CRISP, Esq., F.R.C.S.E.

[The following remarks are extracted from chapter vii. of Mr. Crisp's recent publication on the "Diseases and Injuries of the Blood-vessels."] -

Although inordinate pulsation of the aorta has been described by some authors as one of the symptoms of inflammation of that vessel, we have abundant evidence that it may arise from other causes.

Dr. Baillie (*Transact. College of Physicians*, vol. iv.) was the first to direct the attention of the profession in this country to epigastric pulsation; and he relates a case of twenty-five years' standing, which had been mistaken by two eminent surgeons for aneurism. Laennec and others have recorded similar cases.

These cases may be conveniently divided into three kinds. First, those depending upon constitutional causes, such as chlorosis, hysteria, anemia from loss of blood, &c.; in short, any state of system inducing an impoverished condition of the circulating fluid, or derangement of the nervous functions. A very instructive example of the occurrence of this affection from loss of blood is related by Bowman (*Lancet*, 1843): "A young man, æt. 22, was bled largely and repeatedly for supposed cramp in the stomach; this was followed by pulsation of the abdominal aorta, of so violent a character as to shake the bed, and cause a heaving of the bedclothes; the palpitation extended from about one inch above to three inches below the umbilicus; it was sometimes stronger than at others, and increased on motion." The case was considered by his first medical attendant as aneurism of the abdominal aorta, and he was treated on Valsalva's plan with aggravation of the symptoms; he was then put upon a more generous diet, iron and light bitters were exhibited, and his health speedily improved.

In the second variety, mechanical obstruction appears to be the chief cause of the pulsation. The most frequent of these causes are tumours of various kinds pressing upon the vessel, such as enlarged pancreas or spleen, scirrhus stomach, diseased mesenteric glands, and collections of air and scybalous matter in the bowels. Allan Burns, in addition to these, mentions solidification of the lower lobes of the lungs, dilated heart, and enlarged vena cava.

In the last and most frequent form, the aorta appears to be sympathetically affected. Dr. Baillie supposed that it depended upon a disordered state of the digestive organs, and that it occurs most frequently in the male sex. This latter opinion I believe to be erroneous.

Dr. Fausset (*Dublin Journal*, vol. xi.) supposes that it generally depends upon



chronic inflammation of the stomach. and Dr. Stokes says that "we have from enteritis and peritonitis a throbbing of the abdominal aorta perfectly analogous to the morbid action of the radial artery in whitlow." Although I am disposed to agree with these authorities that stomach or intestinal affection is generally the exciting cause of the malady, I believe it can only take place when the parietes of the vessel are weakened; thus probably depending upon structural defect or deranged nervous influence. It is difficult to imagine that local pulsation can arise from nervous excitability alone, or that the upper part of the vessel can be morbidly excited without the lower part being in a similar state. If functional or structural disorder of the stomach alone would produce inordinate pulsation in a *healthy* artery, these cases, instead of being rare, would be common.

*Diagnosis.*—When the large arteries generally are the seat of inordinate pulsation, as in the first class of cases, the diagnosis is less difficult than in those instances where the vessel is mechanically or sympathetically affected. When the pulsation is limited to a small portion of the arterial tube, the diagnosis becomes more difficult, and the disorder is more likely to be considered aneurismal; but a careful investigation of the symptoms will, in most cases, lead to the formation of a correct opinion.

Aneurism is often preceded by some injury to the abdomen, and is mostly accompanied by pains of an aching or tearing character; a bruit is usually heard, and the tumour, if large, can generally be felt externally. The sex and previous history of the patient will also assist us in determining the nature of the affection; thus, if the patient be a female, the chances will be much against the existence of aneurism. In fifty-nine cases of aneurisms of the abdominal aorta, eight only were females.

*Treatment.*—In the constitutional form, where the blood is deficient in fibrin (globules?), and the heart and arterial tunics partake of the want of tone which pervades the whole system, our object must be to improve the general health by a course of tonic and alterative medicines: the preparations of iron combined with occasional aloetic purgatives will be most beneficial. If the patient be a female, especial attention must be paid to the uterine functions. Placing the patient upon low diet, and thoroughly emptying the bowels will greatly assist the diagnosis.

When there is reason to suspect chronic inflammation of the stomach, the plan recommended by Dr Fausset, namely, spare diet, local bleeding, and counter-irritation over the stomach, with small doses of blue pill and James's powders will probably be most successful. (pp. 94-8.)

## SECT. V.—DISEASES OF THE CHYLOPOIETIC SYSTEM.

ART. 27.—*Symptoms and Treatment of Chronic Ulcer of the Stomach.* By Dr. BUDD.

(*Medical Gazette*, June 25, 1847.)

[We extract the subjoined remarks on the symptomatology and treatment of this insidious and fatal disease from the Croonian lectures of the present year.]

In its early stages the symptoms are few and equivocal. Pain and soreness at the stomach after meals, occasional acid eructations, and occasional vomiting, which are often the only symptoms then present, may result from various other causes, and even from mere functional disorder.

After these symptoms have lasted some weeks or months their very continuance becomes significant; it leads us to conclude that they depend on organic disease, while the seat of the pain, and the circumstance that it is always increased by eating, and usually abates as the stomach gets empty, lead us to infer, in the absence of any direct evidence of disease in the liver or any other organ, that the disease is in the stomach. After a time these symptoms are often succeeded by vomiting of blood in large quantity. When this has happened, the detection of the disease becomes easier. Vomiting of blood may, indeed, result from various other causes, but these may, generally, be distinguished by the circumstances under which they occur.

1st. It may result from a general tendency to hemorrhage, in consequence of a

faulty condition of the blood, as in scurvy and purpura; but in such cases the bleeding is not confined to the stomach, but issues from other mucous surfaces, and appears on the skin as purpuric spots.

2d. Again, vomiting of blood may result from mechanical congestion of the stomach, in consequence of some impediment to the free passage of the blood through the liver or the chest. In such cases the quantity of blood lost is small, and its cause is, in general, obvious from other symptoms which mark an impediment to the flow of blood through the liver or thoracic organs.

3d. Vomiting of blood sometimes occurs without organic disease of the stomach in persons who, in consequence of repeated attacks of ague, have great enlargement of the spleen. Here, also, the previous history of the patient, his cachectic condition, and the palpable enlargement of the spleen readily lead us to the cause of the hemorrhage.

4th. Lastly, the hemorrhage may be vicarious of the catamenia; and this is especially liable to happen in young females—the class of persons supposed to be most subject to ulcer of the stomach. But in such cases the hemorrhage usually occurs at the monthly period, and the natural discharge is found to be suppressed.

When vomiting of blood does not depend upon any of the above conditions, it results almost invariably (except in malignant fevers) from organic disease of the stomach itself. When, therefore, profuse vomiting of blood occurs in a person who exhibits no tendency to hemorrhage, who has no disease of the abdominal or thoracic viscera which can impede the passage of the blood, and the hemorrhage cannot be referred to disordered menstruation, we are driven to ascribe it to lesion of the stomach itself. When such is the case, and when, moreover, the vomiting of blood has been preceded for some weeks or months by pain and soreness at the stomach, always increased by meals, hardly a doubt remains of the existence of disease of the stomach. But in persons under 30, the only disease of the stomach, with few exceptions, which gives rise to hemorrhage is chronic ulcer.

In persons above that age, vomiting of blood, likewise, preceded by painful digestion, may likewise occur from cancer of the stomach. In persons of that age, therefore, the question will be—is the organic disease of the stomach, which we have inferred to exist, cancer or chronic ulcer? When the disease has existed some months, it will, in most cases, be easy to answer this question.

Cancer in most cases originates at the pyloric or cardiac orifice, and obstructs it; it also gives rise to a tumour, which, at the end of some months, is generally palpable enough; it *always* interferes greatly with nutrition, causing progressive wasting. Simple ulcer seldom produces any of these effects. We are thus led to the conclusion, that there is chronic disease of the stomach of such a kind as to cause hemorrhage; that the disease involves only a small portion of the stomach; that it does not obstruct the orifices; and that it does not form a perceptible tumour. The probability in such a case is very great that the disease is simple ulcer, and not cancer. The probability is greater the longer the previous duration of the disease. A simple ulcer may continue almost stationary for twenty years. Cancerous disease, on the contrary, steadily progresses, and the symptoms become week by week more marked, and the patient dies emaciated within a year, or two years at the farthest. If then the disease has lasted this length of time, and there is no great wasting, no tumour, or sign of obstruction of the orifices, hardly a doubt remains that it is simple ulcer of the stomach.

[Respecting the treatment of this form of disease Dr. Budd observes:]

We have seen that there are several circumstances which impede the healing of this ulcer, such as the frequent changes of volume to which the stomach is subject, the writhing movements which are constantly going on while the stomach is in action, the mass of crude substances which are constantly put into it, and the irritating effects of the gastric juice. It is by lessening as much as possible the unfavourable influence of the circumstances that we best promote the recovery of the patient: This is principally done by a regulation of the diet. The patient should prevent the ill effects of distension by eating little at a time, and of food of the mildest kind. Milk, or milk and bread are the articles most suitable, as causing least pain. The good effects of such management are soon perceptible; after

a few days the pain at the stomach has generally much abated, and the sickness has ceased. Sometimes the amendment is progressive, and, if the plan be persevered in, the ulcer heals, and the patient recovers. In other cases the pain and soreness, though much lessened, continue to be felt, and if the ulcer heal at all, it is only after the lapse of many months.

Medicines are of comparatively little efficacy. Where there are sour eructations, or where the vomited matters are sour, fifteen grains of bicarbonate of potash, and three or four grains of nitre, two or three times a day, lessen the pain at the stomach, and are, therefore, it is fair to presume, productive of benefit. In other cases they appear to do harm. The best evidence we can have of the good or ill effects of particular kinds of food is their assuaging or increasing the pain.

When there has been vomiting of blood, and the patient is much blanched, a few grains of citrate of iron may be often given with advantage, as soon as under the influence of strict diet a little solid food can be borne.

I have often tried opium, and hydrocyanic acid, and nitrate of silver, with the object of lessening the pain and healing the ulcer, but never could persuade myself of benefit derived from them.

If vomiting of blood should come on from ulcer of the stomach, the means most likely to restrain it are ice, swallowed in small quantity, rest, *prolonged fasting*, alum, and other astringents.

[In a former part of the lecture, Dr. Budd enters fully into the mode in which chronic ulcer generally proves fatal, viz. by perforation. For the course of treatment to be followed, when this event has taken place, we cannot do better than refer our readers to a case reported by Dr. Marshall Hughes, which, to our mind, exhibits the most rational mode of managing these unfortunate cases. It may be found in "Abstract," Vol. IV. p. 57.]

ART. 28.—*Treatment of the Gastric Irritation of Phthisis.*—[Dr. Budd states, in the same valuable course of lectures, that he believes the peculiar irritability of the stomach which is frequently observed in phthisical cases to be associated with an increased secretion of gastric fluid in an empty stomach. Under this impression he considers—]

The most efficient remedy is liquor potassæ, or some other alkali, which neutralizes the gastric acid, and thus renders the fluid inert. Fifteen drops of the liquor potassæ, or twenty grains of the bicarbonate of potash three times a day, hardly ever fail to stop the nausea or to mitigate the pain. The pain may likewise be stopped in the majority of cases by vegetable astringents. The mildest and most efficient is the infusion of logwood, in doses of ʒj three times a day.

*Medical Gazette*, June 4, 1847.

ART. 29.—*Abscess of the Liver treated by Puncture.*—The following case, reported in the "Medical Times" by Dr. Clay, is sufficiently rare in this country to deserve further publicity. The patient complained of fixed pain in the right superior portion of the umbilical region, for which he was treated antiphlogistically without relief. His bowels were constipated, countenance yellow, spirits depressed, anorexia, pulse 90, evident enlargement of the liver, with paucity of bile. He took ox-gall, ʒij, calomel gr. x, divided into twenty-two pills, of which one three times a day was the dose. Under this plan he quickly improved, and remained well until after bathing, when the fixed pain returned. Being at this time in a different locality, he was again treated by bleeding, &c., and, as before without benefit. He then took the ox-gall and calomel, and a second time became greatly relieved. Dr. Clay lost sight of him from this time, but it appears that while in Dullin he suffered a severe relapse, with pain in the old spot, which had become more tense and permanent. At this spot Dr. Clay passed a grooved needle, and, as it gave issue to a drop of pus, he tapped it freely with a trocar, and drew off four pounds of fetid pus. At each dressing, for several days, a pound of pus escaped, but after that time the discharge gradually diminished, and at the end of three months the man was completely recovered. Dr. Clay calculated that in all, at least sixteen pints of matter must have been discharged. The treatment after the evacuation of the abscess was tonic and alterative, the functions of the liver being restored by the ox-gall and calomel.

*Prov. Journ.*, Aug. 25.



ART. 30.—*The most common Causes of Intestinal Obstruction.*—A summary of the most frequent causes of obstruction of the bowels is given as below by Mr. Crisp. The causes which may give rise to constipation or intestinal obstruction may be either nervous or mechanical. Amongst the former may be enumerated apoplexy, and other conditions of the brain and nervous system, which appear, in a great measure, to paralyze the muscular fibres of the intestines. The same effect may be produced by lead and other deleterious substances introduced into the system. Spasm and irregular contraction of the muscular fibres may also occasion obstruction. The above causes, although often very obstinate, may be generally overcome by appropriate treatment.

The second class of causes, namely, the mechanical, are more likely to occasion permanent obstruction of the canal, and hence lead to fatal consequences. These obstructions may be again conveniently divided into those occurring within the tube, and those produced by pressure from without. Amongst the former, the following are the most frequent:

- 1st. Impacted scybalæ.
- 2d. Extraneous bodies introduced by the mouth or anus.
- 3d. Biliary or intestinal calculi.
- 4th. Malignant or simple ulceration, producing thickening and contraction of the tube.
- 5th. Contraction and thickening of the canal without ulceration.
- 6th. Intussusception or invagination of a portion of the intestines, so as to render the canal impervious.
- 7th. Scirrhus thickening and malignant growths of the mucous or submucous tissues.

8th. Congenital contraction and occlusion occurring at all parts of the canal.

9th. Fibrous tumours of the muscular or submucous tissues.

The causes acting from without are—

1st. Tumours of various kinds pressing upon the bowel.

2d. The escape of the intestine or omentum from its proper cavity through the abdominal parietes and other parts, constituting what is called hernia.

3d. The presence of adventitious bands, which so begirt and constrict the bowel as to produce strangulation, or the passage of a portion of intestine through the mesentery, mesocolon, or omentum.

4th. The gluing together of the convolutions of the intestines by coagulable lymph (the result of acute and chronic inflammation), so as to interfere with their peristaltic motion.

5th. The twisting of the intestine, as in a patient who recently died under my care, from a large umbilical hernia (and who was seen by Mr. Cock). The cause of obstruction appeared to be a twisted state of the bowel, and not, as we supposed, from ordinary strangulation.

6th. Abscess occurring in the walls of the intestine, or in the adjoining parts.

*Lancet*, May 29, 1847.

ART. 31.—*On the Internal Use of Nitrate of Silver in Obstinate Diarrhœa and Dysentery.* By THOMAS AIKIN, Esq.

(*Dublin Med. Press*, Sept. 29, 1847.)

The author of this communication remarks, that the topical application of the nitrate of silver to inflamed or ulcerated mucous surfaces is confessedly a most efficient mode of treating such cases. The knowledge of this fact may have induced physicians to employ the same remedy internally against disease invading the mucous surface of the hollow viscera. Accordingly, we find that ample testimony is afforded to the efficacy of the nitrate of silver in certain morbid conditions of the mucous coat of the stomach; but no English writer, Copland excepted (*Dictionary of Medicine*), sanctions its employment as a therapeutic agent in morbid conditions of the mucous surface of the intestinal tube. The author's object in the present communication is to adduce such testimony in favour of its sanative power in these affections as may stimulate further inquiry into the action of this salt in certain obstinate forms of diarrhœa and dysentery, which occasionally resist the action of the most esteemed remedies wielded in the ablest manner.

Boudin (*Gazette Méd.* No. 51, 1836), physician to the Military Hospital at Marseilles, treated fifty cases of typhoid fever (dothineritis), in most of which severe diarrhœa was the most prominent feature, with the nitrate of silver thus: When the lower portion of the intestinal tract was presumed to be the seat of ulceration, enemata, containing from one to three grains, dissolved in distilled water, were administered. In most cases one enema sufficed, the symptoms undergoing speedy amelioration. In other cases the remedy was given by the mouth, in half-grain doses every half hour, ['] formed into pills with gum tragacanth, or starch, until from two to four grains were thus taken. In some instances these two modes of treatment were combined; the results were that only two of the fifty cases succumbed. Examination showed "many ulcers" on the mucous membrane in a case of incipient cicatrization—"en voie de cicatrisation." There was evidence of the solution administered per rectum having passed the ileo-cæcal valve, and producing effects on the lower portion of the ileum precisely similar to those resulting from its action on the surface of the colon.

Kalt confirms Boudin's statement, having treated twenty-two cases of dothineritis with the nitrate of silver. Of these one died. He gave it in mixture (grs. ij to vj in decoct. salep. oz. vj); a tablespoonful of which was taken every half hour, or hour, according to circumstances.

Hirsch of Königsberg (*Hufeland's Journal*) found the nitrate of silver to succeed in obstinate cases of diarrhœa on the failure of ordinary remedies. It proved specially useful in the diarrhœa of newly-weaned infants. In "the advanced stage of such cases, when emaciation was extreme, the dejections being frequent, fetid, and consisting of a variously coloured, sometimes greenish, or bloody mucus, and wanting altogether the fecal character. When aphthous ulceration pervaded the mouth, and when prostration was extreme, the action of the nitrate was brilliant." He gave it to children thus:—

R Argent. nitrat. crystall.	gr. ½	
Aquæ destill.	3ij	
Gum mimosæ,	ʒij	
Sacch. albi,	3ij	Misce. Ft. mist.

A teaspoonful of this mixture was given every two hours, and an enema, containing a quarter grain of the salt, with mucilage and a little opium, was administered. The good effects of this treatment were occasionally visible in a few hours, sometimes not until the second day. He pronounces it a specific in the diarrhœa of infants. He found it almost equally efficacious in severe forms of diarrhœa and dysentery occurring in adults. He administered it to the latter in pills, in doses varying from one-twelfth to one-twentieth of a grain every two hours. For this purpose he recommends liquorice powder as preferable to the vegetable extracts which affect its decomposition. He also gave enemata, containing half a grain or a grain, with mucilage and opium.

Canstatt also extols the nitrate of silver as prescribed by Hirsch in the diarrhœa ablaetatorum.

Since the author became acquainted with Hirsch's observations, opportunity presented for testing the powers of the nitrate of silver in a severe case of diarrhœa occurring in a child of a year old. Vomiting and purging set in, and continued with almost unabated intensity for five days. The stomach at length retained fluids in small quantities, but the purging continued. Chalk mixture, kino, opium, and acetate of lead were tried, and all, with the exception of the last, seemed to increase the irritation. The dejections were frequent, greenish, sometimes bloody, and very fetid. On the sixth day prostration was very great; there was a tendency to stupor, and quantities of greenish mucus were voided. Under these circumstances he gave the mixture as prescribed by Hirsch. The first dose seemed to increase the discharges; however, in about six hours, the character of the dejections were improved, they became feculent, and every symptom underwent a corresponding improvement.

Should the foregoing observations induce practitioners in this country to subject the action of the nitrate of silver in diseases of the mucous surface of the intestines to a more extensive trial, they may arrive at results confirmatory of those already obtained by the authorities which the author has quoted, and thereby extend the

application of an agent of great therapeutic energy to forms of disease occasionally so intractable as to baffle the powers of ordinary remedies.

[The advantage of the nitrate of silver in the diarrhoea of infants, of which we have had considerable experience, is also acknowledged by Bouchart (*Manuel Pratique des Nouveau-nés*) and by Trousseau. We have given it frequently, and with much benefit also, in the "irritable" bowels of the adult. We generally prefer to exhibit it in solution, more especially in children, since, if given in pill or powder, we have no guarantee that it will not, by suddenly dissolving, exert all its effects, which, in that case, may be too powerful, upon a circumscribed portion of the mucous membrane. This is a point which is not sufficiently attended to in prescribing the nitrate of silver for gastrodynia, and sufficiently accounts for the diversity of opinion respecting its benefit in this complaint. It may be readily conceived that it makes all the difference whether half a grain of solid nitrate of silver lies in a corner of the stomach and dissolves, or whether originally in solution its action is distributed throughout the entire irritable mucous membrane.]

ART. 32.—*Dr. Heberden's Treatment of Dysentery*.—[Dr. Ayres, after quoting the elegant Latin of the "Commentaries," in which the use of saline aperients in dysentery is strongly urged, remarks:—]

I have been in the habit of giving saline purgatives for the last seven or eight years, and, as I can safely affirm, without a single untavourable or untoward result. To adults I have usually given a drachm of sulphate of magnesia, combined with a grain of ipecacuanha, in some simple aromatic water, every six hours; to children about half the quantity; and to infants a still smaller dose. I have observed that so soon as natural fecal dejections are produced, the bloody mucosities cease to be discharged, the tenesmus disappears, and the patient is cured. In by far the majority of cases the bowels have been properly relieved within twenty-four or thirty-six hours; but in a few cases of a more severe character the bowels have been more obstinate, and the saline purgatives have not produced their proper effect until after the lapse of three days. I have also, occasionally, observed the continuance of tenesmus after the proper action of the bowels; but this has been easily relieved by an opiate. The addition of small doses of ipecacuanha I have imagined to be beneficial, from the known efficacy of this substance in several intestinal diseases; but I should place my chief reliance on the saline purgative. In practice I direct the patient to continue the medicine until fecal motions have made their appearance, and then either to take the medicine less frequently, or altogether omit it, as, without this precaution, severe diarrhoea might be induced. Where this plan of treatment has been adopted, I have not seen a single case in which the disease became chronic.

*Medical Times*, Sept. 18, 1847.

ART. 33.—*Treatment of Obstinate Hiccough*.—Dr. Boyer relates three cases of obstinate hiccough, which, having resisted all the usual means employed for its relief, were relieved by prolonged compression of the epigastrium. A large pad is laid on the epigastrium, and bound forcibly down, by a bandage. It is usually necessary to wear it for twenty-four hours.

*Revue Méd.-Chirurg.*, July 1847.

## SECT. VI.—DISEASES OF UNCERTAIN OR VARIABLE SEAT.

ART. 34.—*On the Treatment of Diabetes Mellitus*. By DR. REES.

(*Medical Gazette*, Aug. 27, 1847.)

Dr. Rees observes that we are mere empirics in the treatment of this disease; that, having no principles to guide us, our remedies are exhibited in accordance with the results of experience alone. We are not fully acquainted with the property which the stomach has lost, which enabled it in the healthy state to decompose sugar into oleaginous matters for the purpose of the economy, and we therefore are unable to restore that property. Nor do we know how to stop the ordinary



action of animal diastase after it has formed starch into dextrine, and to induce the change of this dextrine into fat instead of into sugar.

Among the remedies which are known to exert an influence over the diabetic condition, Dr. Rees first mentions opium as possessing the power of lessening the flow of urine in a marked degree, and tending to the production of moisture on the dry and indolent skin. It tends, also, to arrest the progress of waste, by lessening the quantity of solid as well as fluid matters exhaled, and, on this account, is to be regarded as a valuable adjunct to other remedies. In advanced stages of the disease, when there is a tendency to drowsiness, it must be exhibited with caution.

In those early cases in which we may hope to obtain benefit by the use of remedies, it is of the first importance to attend carefully to the state of the bowels. Constipation not only deranges the action of the chylipoietic viscera, but is almost certain to interfere with lacteal absorption.

When opium by itself fails to act upon the skin, the author advises the combination of antimony with it. A draught composed of ℥ij of liquor ammon. acet. and ℥xx of the vin. ant. potass. tart. three times a day, with opium in pill, is an excellent plan for obtaining action on the skin in recent cases. This may afterwards be kept up by baths and frictions. Magnesia combined with Dover's powder has also been seen by the author to be of much service, and he considers it superior to ammonia. He has also used the hydrochloric acid with temporary benefit.

As regards diet, Dr. Rees advises a certain restriction as to the use of saccharine and amylaceous principles, but considers that this restriction may be carried too far; from his own experience he is of opinion that the moderate use of starchy matters is not injurious. He encourages the use of bread rather than of farinaceous vegetables, not so much with the view of assisting in the cure of the disease, as for the purpose of obtaining a more prominent test from the examination of the urine, as to the progress made by remedies. Thus if food which produces but little sugar in diabetic urine be administered, we shall more easily obtain an entire exemption from sugar as our remedies proceed in the alleviation of the disease.

It is important to remember that a diet consisting of fatty matters tends much to assist in the nutrition and support of the patient during the exhibition of remedies. Butter may be given freely with this view.

The following diet is laid down by Dr. Rees as that most generally advantageous:

*Breakfast.*—Three quarters of a pint of cocoa, with from six to ten ounces of bread, and an ample supply of fresh butter.

*Dinner.*—Three quarters of a pound of meat weighed after cooking, twelve ounces of bread, four ounces of cabbage. Wine and brandy-and-water are preferable to malt liquors.

*Tea* without sugar, bread and butter.

*Supper.*—Bread and milk.

ART. 35.—*Treatment of Diabetes Mellitus.*—By CHARLES ELAM, M. B., Lond.—According to this writer, the first indication is to subdue the functionally excited state of the stomach and to restore the natural state of secretion. With this view he considers the topical abstraction of blood by leeches or other means to be an important agent. It is much to be preferred to general bleeding, as the latter reduces so materially the quantity of fibrin.

Counter-irritation is also an important agent in reducing this excited state, and has a doubly beneficial action, inasmuch as by the inflammation excited a slight increase of the fibrin of the blood is induced.

Of internal remedies opium is most effectual by quieting irritation, and causing secretion to take place more slowly and naturally. Ipecacuanha is often given in combination with opium, in the hopes of its acting upon the skin, but it generally fails in producing this effect.

Hot and vapour-baths are very important agents to restore the functions of the skin, not only as regards perspiration, but also with reference to those functions which may be considered complementary of respiration. To this end they must be used daily and perseveringly.

The author considers that the usual plan of limiting the fluid ingesta is a needless punishment, as the thirst is indicative of the requirements of the system in

order to carry off the saccharine matter. Exclusive diet is not advised, and he is an advocate for the use of gluten bread as recommended by Rouchaudat.

*Medical Gazette*, Aug. 20, 1847.

ART. 36.—*Clinical Lecture on Gout attended with Albuminous Urine.* By Dr. TODD.

(*Medical Gazette*, June 18, 1846.)

[The case which gave rise to the following remarks was that of a female, æt. 40, of intemperate habits, the subject of rheumatic gout, with visceral disease of the heart, liver, and kidneys. The author, in alluding to the latter, took occasion to notice that he had met with a condition of the kidney which was peculiar to the gouty habit, and which he calls the gouty kidney; this condition is marked by the appearance of albumen in the urine, and is frequently, but erroneously, according to the author, attributed to Bright's disease. After alluding to the state of the urine, the author thus proceeds:—]

What is the state of the kidney which produces this condition of urine? Some would answer, an advanced stage of Bright's disease. Such, however, is not the case, in my opinion; the history of the patient does not conform to the ordinary course of things in that disease. Her aspect is quite different from that in Bright's disease. On the other hand, her extreme gouty state of constitution led me to think that she had got a contracted and shrivelled state of kidney, in which a large portion of the organ appears to be wasted, and its structure apparently condensed, a condition which, while it may occur in other states of the system, is peculiarly apt to be developed in the inveterate gouty diathesis.

The first case of this kind which arrested my attention occurred five years ago. The patient had been a gentleman's butler, and had had several attacks of gout. He had a shallow, unhealthy look, and the only appearance of dropsy about him on his admission was a copious effusion into one knee-joint. His urine was sufficiently copious, quite clear, and pale, and contained a small portion of albumen. This patient died suddenly, and we found a copious effusion of fluid in one pleura, which must have taken place a few hours before death, and both kidneys were much contracted, shrunken, and granulated upon their surface, presenting all the characters of what has been termed the third stage of Bright's disease.

In reviewing the case of the subject of this lecture, it would appear that she has been the subject of chronic gout, or what some would call rheumatic gout, and that her joints, large and small, have all been damaged by the disease, that her heart is diseased, her liver and kidneys contracted. How strikingly do these consequences comport with the humoral view of the pathology of the disease. Not only are those parts which the morbid matter of gout is most prone to affect materially damaged, but likewise the excretories through which the poison should make its escape out of the system—the liver and kidneys; these organs have become poisoned by the morbid matters which have escaped, or tried to make their escape, from the systems through them, and therefore it is natural to expect a change in their nutrition.

[The post-mortem appearances of this case consisted of hypertrophy and dilatation of the heart, with imperfection of the mitral valve, hobnail liver, and small contracted kidneys. The capsule of these appeared whiter than usual, and separated with great readiness from the gland. On cutting into the kidneys the decrease of size was seen to be chiefly at the expense of the cortical substance. A portion examined under the microscope exhibited the tubes much dilated and deprived of epithelium; no fat-globules are mentioned as being present. These conditions are thus accounted for:—]

Such a condition may, we conceive, be readily produced by a tainted nutrition; the blood charged with the morbid matter or poison of gout furnishes to the glands an unhealthy pabulum which experiences the changes necessary for healthy nutrition in a very imperfect way. The impaction of the gland is sufficiently explained by this hypothesis. When much of the vascular system of the gland has been obliterated, partial congestions take place as a necessary consequence. Some of the Malpighian bodies contain too much blood, while others would be imperfectly supplied. From the former, effusion of serum would take place in the uriniferous tubes, and furnish the small quantity of albumen which is observed in the urine.

Lastly, the small quantity of epithelium which is formed indicated a very defective elimination of urea and uric acid. Hence the urine in these cases is pale and of low specific gravity, and contains these products in very limited quantity.

To this state of kidney I would give the name of the "gouty kidney." To what extent the changes which have taken place are due to inflammation, or how far simple inflammation, without the addition of morbid matter in the blood, is capable of inducing similar alterations I do not at present undertake to decide. Rayer has recognised the small and contracted kidney as the result of chronic inflammation, and it has been viewed in this country chiefly as the last stage of Bright's disease. This latter interpretation of it I now feel convinced must be erroneous.

[The diagnosis of the "gouty kidney" is thus laid down:]

The patient is evidently of a gouty habit, as evinced by general signs, and by his family history, habits of living, and by his having had more or less gout in his limbs. There is dropsy, though this is by no means a necessary symptom, nor is the dropsy so general or great as in Bright's disease. The quantity of urine is not diminished; on the contrary, it is either normal or increased; it is pale, of low specific gravity, and contains albumen in *small quantities*. The continued epithelium-cells filled with fat in the urine would negatively prove that it is not Bright's disease.

[Our readers are aware that this appearance is by no means generally admitted as a necessary concomitant of morbus Brightii.]

ART. 37.—*Treatment of Acute Rheumatism*.—In recent cases Romberg's practice is to bleed in the first instance; to keep the painful limbs at an equable temperature by enveloping them in wadding, and to exhibit ten minims of the tincture of colchicum seeds every two hours, combined with two scruples of the sulphate of magnesia. The remedy found most efficacious in shortening the duration of an acute attack was the bichloride of mercury. To adults it was given in the dose of 1-8th to 1-6th of a grain three times a day. Counter-irritants were at the same time applied.

*Romberg's Clinical Observations. Brit. and For. Med. Rev., July 1847.*

ART. 38.—*On the Alkaline Treatment of Rheumatism*.—In a clinical lecture on rheumatism, Dr. Wright observes: "In advocating the alkaline treatment of acute rheumatism, I am speaking of no novelty of practice. For years past it has been recommended, but by whom first I do not know. At the same time I think it right to state, that I believe there are few, if any, practitioners who have given it a fairer trial, have trusted more exclusively to it, or have derived better results from it, than myself. For six years past I have tried it in every case of rheumatism that has occurred in my dispensary and private practice, and seldom have I been obliged to have recourse to other remedies. I have never, in this space of time, had a case that has terminated fatally, and yet in not one instance have I ordered bleeding from the arm. Leeching and cupping, and these but rarely, have been the extent of my depletive measures. Yet I have had many cases which have equalled, if not exceeded, in severity those which I have seen progress indifferently, or not at all, under the opposite mode of treatment. Yet do not mistake me, and suppose that I am lauding alkalies as specifics in rheumatism. Nothing is further from my intention than to do so: my experience inclines me to the belief, as I have before said, that there is no such thing as specificism in medicine. An agent of this class, you know, should in all cases be infallible; I never met with such a curiosity. All I wish to say and to prove, from my own observation, is that, in the majority of rheumatic cases, alkalies will alone prove curative; and that, when they fail of doing thus much they will at least supersede the necessity of large doses of more uncertain and more potent remedies."

ART. 39.—*Morbid Anatomy of Chronic and Acute Rheumatism*.—In a case of muscular rheumatism, Hasse found the muscles and cellular tissue subjacent dotted over with ecchymoses and delicate vascular ramifications, the latter tissue being likewise more or less infiltrated with yellowish transparent fluid. He gives the following account of the morbid anatomy of the joints in chronic rheumatism: "On closely examining the cartilages of the affected joints they were found of a



reddish hue; the articular surfaces of the bones presented scattered red points of different sizes. The foramina of the bony substance were also filled with a dirty red pulp, consisting of aggregated cells of a globular form, which treated with acetic acid displayed a large nucleus. There were also numerous blood-corpuscles. The fat-cells were few in number, and of a particular shape. The whole cell-wall was separated from the usually homogeneous contents, and the interval thus formed was more or less filled with oily granules. Occasionally a little spot of yellow was seen among the dirty red colour, which indicated the presence of normal fat-cells. The reddened portions were dotted with tubercular spots which were sharply circumscribed. The cartilage was in many places irregularly thinned, especially at the margin of the joint. On examining the bones of non-rheumatic persons, Hasse could not distinguish any of the above-mentioned changes."

The author concludes by the following remarks: "It is certain that in rheumatism the cellular tissue, as well as the bony substance, may become the seat of inflammatory exudation. It is even probable that, in the great majority of cases, especially the slighter ones, the morbid anatomy consists of the appearances described. The changes in the bony tissue may be easily recognised after many years have passed. Those in the cellular tissue are determined with more difficulty."

*Zeitschr. für Rat. Med., and Month. Journ.*

## SEC. VII.—DISEASES OF THE SKIN, &c.

### ART. 40.—*Treatment of Lupus.* By M. PUTEGNAT.

(*Revue Méd.-Chirurg.*, Août, 1847.)

[The author of this paper recognises the scrofulous origin of this intractable malady as the general rule, but admits also that it may frequently be the result of the syphilitic cachexia. Regarding the disease as one of constitutional origin, he insists upon the necessity of having recourse to general as well as local treatment, and gives the following directions for carrying out the two indications:]

*General Treatment.*—The patient should wear flannel, and be rubbed twice a day with the flesh-brush. Twice a week he should take a bath, to which a decoction of walnut-leaves and sage has been added. His apartment should be airy and dry. His diet is to be good, and a certain quantity of wine may be allowed.

Every day he is to take from twenty to a hundred drops of Pearson's arsenical solution in four doses, and in addition to this he is to drink daily a pint of a decoction of walnut-leaves, or of sarsaparilla, if there be a suspicion of a venereal taint. In either case ʒss to ʒj of the iodide of potassium is to be added.

[The local treatment adopted by the author varies, according to the presence of one or other of the three varieties of lupus which he distinguishes, viz.: 1. A particular condition, chiefly of the face, in which the skin is smooth and shining, and of a red coppery colour, without tubercles or ulceration. 2. The tubercular form. 3. Ulceration.]

1st. In the first variety, if the skin is hot and burning, and extremely sensitive to the touch, it is to be covered with an ointment containing the acetate of lead and opium. When the skin is soft, lint dipped in tincture of iodine is applied.

2d. The tubercular form is treated by friction every six hours with the iodide of sulphur ointment, after which the part is covered with lint dipped in tincture of iodine.

3d. The ulcerated form requires cauterization with acid nitrate of mercury, which the author regards as the best of all the caustics in use. The proceeding is repeated as often as the edges of the wound look blue and flabby. The iodide of sulphur ointment, and the tincture of iodine are used in the intervals of the cauterization.

If, after cicatrization has been accomplished by these means, the cicatrix exhibits a tendency to re-open, which is shown by its becoming red and tender, it is to be covered by the lead and opium ointment above mentioned. The treat-

ment is to be continued as long as the cicatrices are soft and sensible to the touch. The natural colour of the skin is said by the author to be restored, with the best chances of success, by the application of lint dipped in a solution containing the following combination, in the proportions of a piece the size of a nut to the pint of water: R. Sulphate of iron and alum, each ten ounces; muriate of ammonia, oxide of copper, and sulphate of zinc, each five drachms. The mass to be melted by a slow heat.

ART. 41.—*Observations on Itch.* By M. DEVERGIE.

(*Med.-Chirurg. Rev.*, July, 1847.)

M. Devergie believes that some of the generally received opinions concerning this disease possess a very insufficient foundation, and, after long and attentive observation in the wide field at his disposal, he has arrived at the following conclusions:

"1. There is a very general opinion prevailing in the world, that the itch is the cause of the skin diseases which may subsequently occur. Without attaching too much importance to this, does it not rest on more or less probable foundations? 2. Although itch is said to be essentially contagious, it may yet frequently arise spontaneously in individuals placed in similar conditions under which it was primarily developed. 3. There is no proof that it has been transmitted from animals to man. 4. When medicines cure the itch, it does not follow that this is by destroying the acarus. The cure of the pustules may be rather said to lead to its death. 5. This insect may just as well be considered as a morbid product as a cause. 6. The experiments undertaken to show that the contagion is operated by means of the insect offer insufficient proof of this being the sole means of infection. 7. In the hypothesis of contagion being due solely to the acarus, as the contact of individuals with each other does not always take place in the same manner, we must suppose that the acarus for a certain period crawls over a large portion of the surface of the body to the place of election (the hands and feet), to the neglect of many other portions, which a few days after will be covered with itch-pimples. This regular and simultaneous development is much more likely to be dependent upon a general cause acting upon the entire economy, than upon a local one, arising from an insect transplanted from one individual to another. 8. If the acarus is the cause of the itch-pimple, it seems difficult to understand how it escapes from the central point of the pustule while digging a deeper gallery beyond it, scarcely ever having any communication with another pustule. This fact, which may be daily observed by the naked eye, is much more in harmony with the hypothesis of a morbid generation. 9. There is nothing fixed in the incubation of itch, which is much more in accordance with what takes place in other cutaneous diseases than with the idea of infection by means of an insect. 10. It is in the severest form of itch, the pustular, that we find the fewest acari. This form is cured most easily, and seems the least contagious. 11. It is singular to find the same insect producing three different forms of eruption; and not only are these forms different, but so are their contagious properties and the number of insects found in them. 12. Statistics show us that itch is the most common antecedent of impetigo, lichen, and eczema. 13. The itch may disappear for a greater or shorter period under the influence of a general affection of the economy, and like the other cutaneous diseases, remain latent, and then reappear with renewed energy after five or six weeks, without any new infection having taken place."

From these corollaries M. Devergie draws the following conclusions:

"1. If the acarus is one of the phenomena of itch, its existence as a morbid product is as admissible as its operation as an agent of transmission. The known facts agree much better with the former hypothesis than with that which considers the insect as the exclusive agent of transmission and only cause of contagion. If even the acarus, by being transported to another individual, may communicate the disease, the products of secretion, the itchy atmosphere, and the clothes impregnated with this, may also produce it. 2. The principal therapeutical consequence deducible is, that we must treat the itch, and not the acarus, contrary to what is generally the practice. We should treat the disease like other cutaneous affections upon general principles, and not by mere local applications. Indeed,

is it not reasonable to take into consideration the two well-marked symptoms, whose sudden suppression is so mischievous in other cutaneous diseases, viz., the *itching*, become habitual in proportion to the duration of the disease, and the *secretion* in the pustular form? In the place of searching for means to cure the itch in the shortest possible time, should we not endeavour to do so gradually in proportion to its duration? Should we not, after its cure too, prescribe in some subjects the prolonged use of simple baths, to reduce the morbid sensibility of the skin and re-establish its functions, or even vapour-baths to produce a sedative effect on the nervous system, as well as a depurative cutaneous secretion, if I may be allowed such an expression? So in regard to pustular itch, should we not act repulsively upon the intestinal canal by means of purgatives, to compensate for the suppression of secretion over so multiple a surface? This is my practice, and I do not feel disposed to abandon it, because it seems a rational means for the prevention of the ulterior development of other cutaneous diseases, of which I believe itch to be one of the predisposing causes."

ART. 42.—*Clinical Observations on the Treatment of Squamous Diseases of the Skin.*  
By M. DEVERGIE.

(*Gazette des Hôpitaux*, Nos. 1, 13, 22, and *Med.-Chirurg. Rev.* 1847.)

*Arsenic* may be given in pills or in solution. The Asiatic pills so much used in the French hospitals are thus composed: Arsenious acid, gr. j; black pepper, grs. xij; gum. ʒij; water, qs.; to form twelve pills. One pill, or at most two pills, to be given for six or eight weeks. M. Devergie considers this mode of exhibiting arsenic as unsatisfactory. Among the solutions, the liquor. potassæ arsenites of the London Pharmacopœia is best known. M. Devergie gives one drop the first day, two the second, and thus increases the dose by single drops till twelve or sixteen are given, which is his maximum.

Under the arsenical treatment, in favourable cases, the scales fall off. The skin assumes its proper level, and the affected parts, from being red, become brown and smooth. This is of importance, as it is only when we have obtained this brown colour that we can be assured of the cure. It is a proof of the efficacy of the medicine, and a measure of the quantity required. So certainly is this brown colour of the spots a sign of cure, that if there be a relapse within a year, or even in three months, it never reappears on the spots originally affected.

The first effect of arsenic is a general falling away of the whole body, and a leaden brown coloration of the face; from which it results, that patients who have been cured of their cutaneous affection, and are in other respects well, have the appearance of having just recovered from serious disease. Arsenic seems to exert a modifying power on the secretion of fat, and on this account M. Devergie has prescribed it successfully for the removal of adipose tumours.

Arsenic gives rise to certain accidents which should be borne in mind. All persons cannot bear the same dose. In some eight drops will produce anorexia and other disorders of the system, and in such instances its use must be suspended. It sometimes happens, that when we have again reached six drops a day, all the poisonous effects are again reproduced, and in this case we must definitely renounce it, as it will not cure the disease against which it is employed. [This statement is contradicted by the experience of Mr. Hunt. See Report.] Some patients will say that they suffer from dyspnœa, others from partial loss of limb, others from colic or diarrhœa; in a word, from a series of strange nervous phenomena, none of which are characteristic of poisoning from arsenic. Of these symptoms, dyspnœa is the most common. The presence of this medicine in the urine will prove that the system is salivated with it, and that its therapeutical action has reached its limits.

*Antimonials.* This class of medicines may be exhibited either in pill, as Plummer's pill, or in solution. M. Devergie prefers the latter form. He gives  $\frac{1}{2}$  gr. of tartar emetic with  $\frac{1}{2}$  a drachm of cream of tartar, followed by a glass of *eau sucrée*. In this way he states that it produces neither vomiting nor purging. This medicine requires to be continued for two months.

M. Devergie does not put much faith in external treatment of the scaly diseases,



but of ointments he prefers tar, or soda mixed with lard. White precipitate ointment is sometimes used by him (two parts to 6—30 lard).

In choosing among the variety of treatment of these diseases, several circumstances have to be taken into the account. 1. If the disease be hereditary, no treatment will in general be followed by complete success. 2. We must learn the duration of the disease, and whether it be a relapse. If it has never been treated, we must endeavour to obtain a radical cure; but if it has already been treated, we must fear its reappearance.

In young and delicate subjects, M. Devergie states that he has seen much advantage from the cold-water treatment, but it has no more power in preventing relapses than any other.

## SECT. VIII.—THERAPEUTICS.

### ART. 43.—On a New Criterion for the Regulation of Blood-letting.

(From a Review of Polli's Researches on the Blood. *Med.-Chirurg. Rev.*, Oct. 1847.)

\* [This criterion is deduced from the author's former series of researches, and confirmed by practical application in the hospital. It is thus stated to be "*The period of coagulation of the blood observed at different intervals of time between the abstractions, and in different portions of the mass taken during one blood-letting;*" and is amplified as follows:]

"1. Every time a large abstraction of blood is practised, so as to lead to lipothymia, the last portion of that removed always coagulates with greatest promptitude, whatever may have been the time occupied by the first portion in coagulating. 2. Whenever, on the contrary, upon a person suffering from sanguineous congestion of the nervous centres, asphyxia, apoplexy, &c., bleeding is practised, and, by its use, the vital functions are again set at liberty, the last portion of the blood so removed coagulates much more slowly than that which was first emitted. 3. That it suffices to interrupt in some manner the course of the blood in the vein, or to diminish, by means of a ligature applied to an extremity, the irradiation of the nervous power, in order to secure the speedy coagulation of blood, which, a short time after, owing to the obstacles being removed, may reacquire the power of remaining long without coagulation. 4. That in diseases decidedly of an inflammatory and grave character, during which for the safety of the patient repeated blood-letting is requisite, if, on the occasion of every venesection, the coagulation of the first and last portions drawn be examined, it will be found that at the beginning the coagulation of the latter portion takes place *subsequently* to the former, and continues to do so in an equal ratio to the development of the morbid process, until this reaches its height. From this point, however, as the disease commences declining, the coagulation of the blood of the latter portions *precedes* that of the former. 5. That in the cases in which abstraction of blood has been desisted from for some days, when the *slow coagulation of the last portion* taken announced a continuance of the phlogistic increment and the tolerance of blood-letting, it has become necessary to resort anew to this therapeutical agent, which can in no case be laid aside with the ready cure of the patient, unless the latter portion of the blood manifests an opposite disposition to that now pointed out. 6. That in opposite cases, in which the abstraction of blood is persisted in, *notwithstanding its rapid coagulation* after all the venesections and during the two extreme periods of the same one, it has to be speedily renounced in consequence of the symptoms of intolerance which manifest themselves; and in those few unfortunate cases in which blood-letting is obstinately persevered in under the guidance of fallacious symptoms, vital exhaustion cuts short the career of the patient much more rapidly than would have done the course of the disease.

"It results, then, from these observations, that the maintenance of the fluid state of the blood, comparing one bleeding with another, or different periods of the same bleeding, is a measure of the vital energy proper to the individual, and of that brought into play by the morbid process; and that hence may be determined tolerance and indication of blood-letting; as on the other hand a prompt coagula-

tion of the blood announces diminution of vital energy, or its exhaustion by the pathological action; and in every case that the power governing the phlogistic or morbid vital movements is lowered."

[The criterion is of easy application, the first and last portions of blood drawn being separately collected in glass vessels, and placed at rest beyond the influence of disturbing causes before adverted to. As the difference of time employed by the blood in coagulating depends both upon the condition of the individual and the amount of blood drawn, the criterion in question may not only serve as a guide in judging of the propriety of bleeding in a certain contingency, but may determine the exact quantity to be drawn, and the period of its repetition.]

"Let an individual be bled to faintness, and you will always have the last portion of the blood rapidly coagulated, and consequently deprived of buffiness. Receive the blood into six, eight, or ten small recipients, of a similar form and nature, and the coagulation in the first will be in exact relation with the disposition of the fibrine to maintain itself in the liquid form proportionately to the particular physiological or morbid state of the organism; while in the last, such disposition will become gradually paralyzed and almost destroyed, from the gradually increasing effect of the abstraction itself. By contemplating this phenomenon, which is always a result bearing proportion to the two influences above alluded to, we are enabled to lay down a rule for in some cases practising abundant blood-letting at one time, in others practising it at intervals, or in small quantities; or again simply interrupting its flow once or twice for some minutes during the abstraction, &c., accordingly as we may be desirous of obtaining a sudden subdual of the morbid exuberance of the vascular activity, or of securing a copious depletion without too great exhaustion of the strength, or the functional disturbance ensuing upon lipothymia, which may injuriously affect the regular course of some affections.

"From the different coagulation of the various portions of blood we may, moreover, as we have said, measure the *intensity of the inflammation* and the *tolerance of the individual*; or, as others would express it, we may measure the morbid capacity and the amount of diathesis. There may, indeed, be a case in which the first portion of blood drawn indicates by its very slow coagulation a very high pathological condition, while the last portion announces in its rapid coagulation that the emission of blood has completely lowered the powers. This phenomenon may be dependent upon the existence of a very circumscribed, though a very intense affection, or upon exhaustion induced in an individual primarily possessed of very feeble powers of organic reaction; and in such a case bleeding must be most reservedly employed, and frequently entirely rejected, for the reason that it is a lesser danger to leave the disease to proceed unchecked, than to have recourse to means which remove it and the patient together. This difficult pathological circumstance, which a celebrated Italian physician justly compares to an *island of fire in a sea of ice*, is already known to practitioners as one which requires in the use of antiphlogistic measures great regard to be paid to the failure of the general strength. But, unfortunately, it has not always been easy to establish its diagnosis in time, or before unadvisably energetic therapeutical procedures have been put into force. But the criterion I propose informs us of these two opposite conditions co-existing in the same individuals, and measures their degree with a facility and security that no method of investigation hitherto recommended in these difficult cases can boast of."

[To the objection that the criterion only comes into operation after the abstraction of blood, Dr. Polli observes that, in ordinary inflammatory diseases, the repetition of the blood-letting is the point to be inquired into; and that, even in those rarer cases in which the diagnosis is very obscure, and in which a first bleeding might prove the cause of safety or of death, no harm whatever, and much good, would result from a very small *exploratory* venesection, and made in the view of obtaining the desired information. Such, consisting of one or two ounces, received in two separate vessels, should be instituted in all obscure cases of this kind, before resorting to an ordinary venesection.] "Perhaps even those small bleedings should be practised in all diseases indistinctly as a means of exploring the condition of the blood, for the same reason that, since auscultation has been employed upon all patients, it has not unfrequently revealed latent morbid conditions, to

which the attention of the practitioner might otherwise not have been called until a more remote and a too late period." [A small subtraction which can do no harm to the economy, will yet depict to us the true characters of the vital condition of the tissues, and of the amount of the exaltation of the vascular activity and nervous function. It often suffices for the discovery of those circumscribed and concealed phlegmasiæ, which, frequently not spreading to such organs as would furnish external symptoms of their existence, pursue their undermining course until they have reduced the viscera they affect to such a condition, that some acute contingency at last suddenly betrays their formidable character.]

"Although the preservation of its fluidity by the blood, or the more or less time it requires for coagulation, constitutes for us the most certain measure of the activity of the phlogistic force, this is, however, only durable in its indications in proportion to the stability of the morbid process itself. The phlogosis may, during its course, spontaneously increase or diminish in intensity, accordingly as it extends to neighbouring tissues, or is confined to those first invaded. So that the different resistance of the blood to coagulation, which in every case announces with a rare exactitude the present state, cannot be extended, except within certain limits, to the indication of that which is to follow; since this latter can only be the complex and simultaneous effect of the condition of the development of the pathological lesion, and of the modification which the blood-letting itself may have induced. Our criterion, as expressing the present state of the organism, and the impression which the bleeding has developed, furnishes indications which are available for about twelve hours after, and may continue to be so for a much longer period, even to the supervention of complete health, providing new morbid causes and accidental inflammations do not supervene and complicate the course of the disease. And of this we may assure ourselves by the repeated observation of the coagulation of blood taken at brief intervals; since the times employed in the coagulation of the blood taken at the successive abstractions will generally glide, whether these are diminishing or increasing, gradually into each other, sudden variations not being observable, save when exacerbations or irregular complications coincide."

[In corroboration of the above views, tables are furnished of twenty cases of inflammatory disease observed in the hospital, for the relief of which were collectively performed 147 venesections. Notes to each case reported exhibit the author's views of the amount of corroboration derivable from it. Some of these are highly interesting, but we have only space to notice some of the practical conclusions he arrives at.]

"The observations already made upon the indications the physician may draw from the observation of the coagulation of the blood, and the clinical cases adduced in confirmation and illustration of this criterion, clearly prove that its value rather lies in its enabling us to fix a limit to the abstraction than in encouraging its continuation. And, in fact, if we are not deceived, the comparison of the coagulation of the first and last portions may, independently of the presence of all other symptoms, distinctly indicate whether the evacuation will tend to normalize the vital powers of the functions of the organism, at one time liberating them from oppressive congestions, and at another from the obstacles presented by the excessive and unbalanced action of the nerves, or whether it attacks them with all its impoverishing effects, and directly exhausts the forces necessary to the carrying on of life. Of the two indications which this sign offers the last is not only the most important, since its neglect almost amounts to a fatal result in the disease, but it is also the most attainable, or at least the best supported by facts. The cases referred to show that, if the coagulation takes place with a certain celerity, and this manifests itself repeatedly, and goes on increasing with the blood-letting, we cannot persist in the measure without losing the patient; while the patient hardly ever dies when it is suspended prior to the coagulation having acquired great rapidity.

"It is not necessary for the complete cure of an inflammation to continue the bleedings until the blood no longer gives any buffiness; while it is absolutely necessary to cease the omission when the blood coagulates more rapidly than in the normal state. The production of buffiness of blood of equal coagulability, as shown in the former series, is always rendered more easy and in larger quantity after a certain



number of bleedings than at first, in consequence of the diminished density which the blood acquires, which naturally always much diminishes the phlogistic expression, and the consequent indication for bleeding drawn from the crust that covers the blood after a certain number of emissions. The crust or buffiness, in fact, not being *essentially* produced by an increase of fibrine, by a diminution of red globules, or by an attenuation of the serum, but arising from a certain slowness of the coagulation, (of that faculty by which, in certain morbid conditions of the organism, and especially under the influence of the phlogistic process, the fibrine has acquired the power of maintaining itself in a state of fluidity for a period always much longer than in the normal state,) it may at once disappear by the operation of whatever modifies that slowness. When the phlegmasia is subdued, and the morbid reactions give way to healthy movements, the blood will cease to contain fibrine in a hypersthenic condition, and will then undergo coagulation in a period of time that does not permit the appearance of the buffiness. It happens not infrequently that if, for some reason independently of a reproduction of the phlegmasia, we draw blood during the advanced convalescence of a severe inflammation, in the treatment of which bleeding had been suspended, while the blood was yet covered with a firm phlogistic crust, it will now be found to present no trace whatever of this. A patient may have blood in circulation which if drawn would furnish a buffy crust, and who will yet be perfectly cured without blood-letting. This change in the blood within the vessels, without profuse crises inducing the belief that the morbid matters supposed to be indicated by the buffiness had been evacuated by other channels, frequently excited the surprise of the ancients: but faithful to observation, they had nevertheless laid down as a canon "*Ob solam crustam inflammatoriam venæsectio repetenda non est.*" (Quarin, *Met. Med. Inflamm.*, p. 70.)

ART. 44.—*On the Rubefacient and Counter-irritant Effects of Potassa Fusa in certain Forms of Disease.* By JOHN BARNES, M. D., of St. Louis.

(*British Amer. Journ.*, Sept. 1847.)

Having in a large number of cases employed the potassa fusa, or vegetable caustic, for upwards of twenty-five years in his practice, in Philadelphia, Mississippi, and St. Louis, as a powerful rubefacient and counter-irritant in some forms of diseased action, Dr. Barnes deems it due to the profession to present, for the consideration of its members, the results of his experience in the employment of this article of the materia medica.

In the different forms of whitlow or paronychia, and in all the stages of each form of this painful affection, he has used this remedy very extensively, and with the most satisfactory results. If applied early, and before deep-seated suppuration and ulceration have taken place, the disease may be promptly removed; and, even in later periods of the disease, when suppuration has commenced, the mischief in many cases may be quickly arrested, and the patient's suffering greatly mitigated, and its duration shortened. Even in those cases in which, owing to neglect or mismanagement, the deep-seated suppuration and consequent ulceration have been extensive, and the pus has made its exit, causing great injury to the surrounding parts, the chronic inflammation and consequent enlargement of the diseased tissues are essentially benefited by its application; care being taken to avoid those parts where the cuticle has been destroyed.

Dr. Barnes does not pretend to assert that, in all cases, the early application of the vegetable caustic will supersede the necessity of an operation to procure an exit for the confined pus, but that he has seen a great many cases get well under its action, which he believes could not have been cured without an operation, had any other mode of treatment been adopted.

This remedy is especially adapted to the treatment of those cases of whitlow in which the disease has its seat in the vicinity of the metacarpal bones, as the operation of cutting down to the diseased tissues in this part is rendered hazardous, owing to the situation of the circumflex arteries of the hand.

His mode of using the vegetable caustic in cases of whitlow or paronychia, is to take a portion of a stick of it, and, wrapping a roll of paper round one end of it to protect the fingers from its action, to slightly moisten with water the other end, and rub it over the surface of the diseased and adjacent parts for a few seconds,

and until the patient complains of a painful burning sensation; if this burning sensation very quickly subsides, he frequently reapplies it for a short time. In most cases, however, the burning sensation lasts for several minutes, and patients often complain of its great severity.

To avoid all danger of destruction of the skin, he attends carefully during its application, to the sensations of the patient, and desists so soon as much pain is experienced, and carefully removes, with a piece of linen cloth, any portions of the vegetable caustic which may remain on the surface to which it has been applied.

These applications of the vegetable caustic are to be repeated as often as the exigencies of each respective case may demand. In some cases the application may be made daily, and even oftener; in other cases every other day will be sufficient, while, in some cases, once or twice a week will be as often as the diseased parts will admit of its application. During the employment of this remedy, such other treatment as the case requires should be adopted in connection with it.

In the treatment of venereal bubo he has derived great benefit from the application of the vegetable caustic in promoting its dispersion or absorption. He applies it, repeating the application as often as may be necessary, over the whole surface of the skin covering the enlarged gland, and for an inch or two beyond, in the same manner as directed in the treatment of whitlow; and its use when applied to the delicate skin of the groin is usually succeeded by a crop of minute pustules.

In a large number of cases he has very happily effected dispersion of the bubo by the use of this remedy, and in those cases where, notwithstanding its application, the bubo has gone on to suppuration, the sufferings of the patients have been thereby greatly mitigated.

If deemed necessary, the application of leeches may precede the use of the vegetable caustic, and during its employment, mercurials may be taken internally, and mercurial frictions be made to the inside of the thighs, and the bubo itself dressed with stramonium ointment, or any other appropriate application. In many cases, however, if the bubo be not very large, a few applications of the vegetable caustic will be sufficient for its entire removal, without the use of any other remedy: but prudence, at the same time, dictates the exhibition of some alterative medicine for the protection of the constitution from ulterior consequences, which may arise from the venereal poison.

As respects the use of the vegetable caustic as a rubefacient and counter-irritant in the forms of disease before mentioned, he feels no hesitation in recommending it as a most efficient remedy, having fully tested its virtues in numerous cases in a long course of practice.

He has no doubt the vegetable caustic will be found an invaluable remedy in almost all cases in which it may be desirable to produce prompt and efficient influence by rubefacients and counter-irritants.

ART. 45.—*On the Therapeutic Powers of Electricity and Galvanism.* By Dr. GOLDING BIRD.

(*Medical Gazette*, June 11, 1847.)

[We have at various times (see Abstract, Vols. III. and IV.) reported the observations of Dr. Golding Bird and others, on the important aid to be derived from electricity and galvanism in the treatment of several forms of disease; in the following abstract we propose giving a more extended series of remarks by the former writer, who has had unusual opportunities of testing the applicability of those powerful agents. The diseases in which he has principally used electricity are chorea, amenorrhœa, and various forms of paralysis. The number of cases of the former disease submitted to this treatment amounted to thirty-seven, of which thirty were completely cured. Of amenorrhœa twenty-four cases were thus treated, and in these the remedy succeeded in twenty. In connection with amenorrhœa Dr. Golding Bird remarks as follows:]

In electricity we possess the only really direct emmenagogue which the experience of our profession has furnished us with. I do not think I have ever known it fail to excite menstruation where the uterus was capable of performing this

function. Disappointment will, however, most certainly result if we have recourse to electricity merely because a girl does not menstruate; we must never lose sight of the fact that, after all, the majority of cases of amenorrhœa depend upon an anemic condition, and the patient does not menstruate simply because she has no blood to spare. Nothing can be more ridiculous than to apply electricity, or other local stimulant to the uterus when chlorosis exists; the first indication will be to restore the general health, and then, and not before, to stimulate the uterus. It is true that, in a large proportion of cases, the catamenia will appear as soon as the chlorosis is cured: in such cases, of course, there will be no need of the employment of electricity, but still a large number will occur in which, even after the complete relief of the anemic symptoms, the uterus remains torpid, and refuses to act; in such cases a few shocks transmitted through the pelvis seldom if ever fail in inducing menstruation. I have repeatedly known the catamenia, though previously absent for months, appear almost immediately after the use of the electricity, in more than one instance the discharge actually appeared within a few minutes.

[Dr. Bird, in the next place, records his experience of electricity in the various forms of paralysis, including paralysis from lead, rheumatic paralysis, paralysis of the portio dura, and hysteric paralysis; but as his remarks on these subjects are, for the most part, identical with those which we have formerly reported (Abstract, Vol. IV, p. 35); we shall not here repeat them: we shall simply recapitulate his concluding observations, which will be found of considerable value to any of our readers who may be disposed to give electricity a trial in paralytic cases. His conclusions are:]

1st. When the paralytic lesion is recent, the cause still active, electricity not only does no good, but may often do much mischief. I would give an especial caution where rigid arteries are known to exist, or ramollissement of the brain is suspected. In more than one example of these affections I have known fatal apoplexy to be induced by the remedy in question.

2d. In paralysis accompanied by rigid flexure of the thumb or fingers, I have never seen electricity do any good.

3d. In cases of paralysis depending upon some physical cause, as effusion or pressure from other sources, when the original cause has been removed but the palsy remains, electricity, and especially the electro-magnetic form of it, is of the utmost value. These cases are not uncommon. . . . In such cases the electrical treatment must not be given up too soon, as if the paralysis be long continued, some of the new tissue deposited in the affected muscles, never having been under the stimulus of the will, persistence in the electrical treatment becomes necessary.

ART. 46.—*The Electric Moxa*.—[Dr. Golding Bird states of this mode of counter-irritation:]—It was long ago observed by Humboldt, and afterwards by Gripen-giessen, that when a simple galvanic arc was applied to a blistered surface, the part opposed to the most oxidizable metal was more irritated than that to which the negative plate was applied. In applying such a simple arc to the treatment of paralysis, I was struck with the remarkable effects produced, and such a combination of its results induces me to propose the following ready mode of establishing a discharge from the surfaces of the body. Order two small blisters, the size of a shilling, to be applied to any part of the body, one a few inches below the other; when the cuticle is raised snip it, and apply to the one from whence a permanent discharge is required a piece of zinc foil, and to the other a piece of silver, connect them by a copper wire, and cover them with a common water-dressing and oiled silk. If the zinc plate be raised in a few hours, the surface of the skin will look white, as if rubbed over with the nitrate of silver. In forty-eight hours a decided eschar will appear, which (still keeping on the plates) will begin to separate at the edges in four or five days. A common poultice may now be applied, and a healthy sore, freely discharging pus, will be left.

*Med. Gazette*, June 1847.

[It would appear that the chief advantage attendant upon this method of forming an issue is its painlessness compared with moxa, etc., otherwise it must be



allowed to be a tedious operation, four or five days being required to effect what may be done by liquor ammoniæ, followed by savin ointment, in as many hours.]

ART. 47.—*Substitute for Epsom Salts.*

Carbonate magnesia	. . .	15 parts.
Citric acid	. . .	21 "
Syrup	. . .	60 "
Water	. . .	300 "

The citric acid is first dissolved, and then added to the carbonate of magnesia diffused through water. It does not effervesce, but may be made to do so by adding half the acid at the time of taking it. The above proportions in grains would form a dose. [?]

*Medical Gazette, from Gaz. Méd.*

ART. 48.—*Di-arsenite of Quinine.*—Dr. Kingdon introduced a new preparation of quinine which he had lately succeeded in preparing. It is the di-arsenite,—that is, it consists of one part of arsenious acid, and two of quinine; it is a powerful medicine, and one which he has found of great benefit, especially in chronic cutaneous affections, and has no doubt it would be equally beneficial in ague, tic douloureux, and neuralgia. It possesses both the qualities of a mineral and vegetable tonic, and when the system has become habituated to either the one or the other (which we frequently find the case from long continued use), by the administration of this medicine you still keep up the former action, while at the same time a new one is introduced into the system. He related a case which demonstrates this very satisfactorily. A young woman who had been affected with lepra six years, was admitted a patient at the Exeter dispensary, under his care, and was ordered the liq. potassæ arsenitis, with decoct. dulcamaræ, three times a day. For a time the disease appeared to be improving, but it gradually got back to its former state, although the quantity of arsenical solution was increased to the full extent; he then ordered one-third of a grain of di-arsenite of quinine to be taken twice a day, and the following week the eruption was much improved—to make use of her own expression, "It was looking quite beautiful." It has been gradually increased to four times a day, and now she is nearly well.

Dr. Kingdon has tried it in several other cutaneous diseases, and with equal success. The preparation is made in the following manner. He first dissolves sixty-four grains of arsenious acid, and thirty-two grains of pearl-ashes, or subcarbonate of potash, in four ounces of distilled water, by boiling it for about half an hour, and then makes it up to four ounces with as much water as may be required, so that each drachm may contain two grains of arsenic. He adds five drachms of this solution to two scruples of disulphate of quinine, previously dissolved in boiling distilled water; immediately a white curdy precipitate is formed, which is the di-arsenite; he then pours it on a filter and dries it. It is uncrystallizable in hot water, but soluble in alcohol. Dose gr  $\frac{1}{3}$  twice a day.

*Prov. Journ., Aug. 23.*

## PART II.

# SURGERY.

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### SECT. I.—SYMPTOMATOLOGY AND DIAGNOSIS OF SURGICAL DISEASES.

ART. 49.—*Diagnosis of a Mercurial Sore.*—Dr. Porter gives the following as the characteristics of the mercurial in contradistinction to the venereal sore.

1st. Mercurial sores are not necessarily circular or oval, neither are their edges regularly defined; on the contrary, they vary in these particulars, and assume different forms as they spread; their edges are often quite ragged, loose, and undermined, and their borders are often marked with a thin transparent cuticle, like that of a newly-formed cicatrix, extending quite around them, and giving them a silvery-white appearance.

2d. The bases of mercurial sores are not hard, neither are their surfaces covered with the tenaciously adherent lymph so characteristic of venereal; on the contrary, the surface of the mercurial ulcer may present every variety of shape and appearance, sloughy at one spot, deeply excavated and rapidly ulcerating at another, with exuberant granulations at a third, and exhibiting a tendency to heal at a fourth.

3. But the most striking characteristic of the mercurial ulcer is its tendency to spread, and the manner in which it enlarges itself. Venereal sores when not affected by phagedena increase slowly, and having reached a given size remain stationary; the mercurial generally spread quickly, and there seems to be no limit to the size they may possibly attain. I have seen an ulcer as large as my hand in each groin of the same individual. Mercurial sores, too, are easily distinguished from the venereal when they assume an herpetic character, and heal in one part whilst they are spreading in another, which the latter never do; this latter diagnostic is often extremely valuable in ulcers of the throat, and on the penis, where any extensive loss of parts may be most sensibly felt during the life of the patient. The mercurial ulceration often attacks the cicatrix of a recently healed chancre, and a fresh sore is thus formed, a circumstance that does not happen to the true venereal sore, except by some accidental injury, or the application of a new infection.

*Dublin Medical Press.*

ART. 50.—*Signs of Fracture of the Cervix Femoris.*—In allusion to a case recently occurring in the person of a woman, aged 53, M. Velpeau made the following remarks: "Pain and swelling are signs of little consequence, as they may equally exist in fracture or sprain. The impossibility of *raising the heel from the bed* is a sign. It may certainly be present also in a painful affection of the joint, but in the fracture of the cervix there is an absolute impossibility of raising the limb, while in the other affection this may be done if the pain be disregarded. Thus, in a luxation, the patient seems at first unable to raise the limb, but he can do so by perseverance. *Eversion of the foot* is not a pathognomic sign, as it may exist in other lesions, e. g. luxation on to the pubis; but in the case of luxation, not only is the limb everted, but neither the patient nor the surgeon can change its direction, while in fracture the surgeon easily turns the foot inwards. There are other affec-

tions in which the foot is rotated outwards, as in paralysis, and certain painful affections of the hip. The *admeasurement* of the limb is of great importance, but it is of much more difficult accomplishment than is generally believed. The inclination of the axis of the pelvis, or of the limbs themselves, often gives rise to apparent differences, against which we must be on our guard. We must never depend on mere inspection, but must carefully measure the limb after having placed the patient on his back, and take care that he lean neither to one side nor to the other. In those persons in whom the bony points are prominent, it is easy enough to measure from the iliac spine to the upper edge of the patella; but there are others in whom the iliac spine is so rounded off, that we cannot be certain that we are applying the tape upon exactly corresponding points of the two sides, and an apparent difference, amounting to some lines, may result. So also the patella is not only a fixed point, but its superior angle may be somewhat higher on one side than on the other. In this way several slight errors conjoined may give rise to the belief in a shortening, which has no real existence. By carefully guarding against any obliquity of the pelvis, ascertaining exactly the position of the superior anterior spinous process, and carrying the tape down to the malleolus, instead of the patella, we shall avoid all serious errors.

*Gazette des Hôpitaux*, No. 68.

ART. 51.—*M. Kün's New Instrument for the Diagnosis of Tumours*.—M. Kün, Professor of Physiology in Strasbourg, presented to the Medical Society of that city an instrument, the application of which is likely to produce the most beneficial results in the diagnosis of various kinds of tumour. It consists of an exploring needle, having at its extremity a small depression with cutting edges. On plunging this instrument into a tumour to any depth, we can extract a minute portion of the tissue of which its various layers are composed. In this manner a microscopic examination of the tumour can be practised on the living subject, and its nature ascertained before having recourse to an operation. We have proved the utility of this method of diagnosis on three occasions, and seen conscientious practitioners renounce an operation previously determined on when the cancerous nature of the tumour has been demonstrated by the microscope.

*Monthly Journ. of Med. Science*, May, 1847, p. 853.

ART. 52—*Separation of the Sacro-iliac Symphysis*. By M. KLUYSKENS.

(*Gazette Méd. de Paris*, 16 Avril, 1847, from *Ann. et Bull. de la Société de Méd. de Gand*.)

Science reckons so few examples of this lesion that the cases contained in M. Kluysken's memoir form, unquestionably, the most interesting part. We shall, accordingly, extract them, and add those which M. Meulewaeter has recorded in his report on M. Kluysken's work.

CASE I. A tall, strong girl, 24 years old, fell from a height of six feet. M. de Block, on the 7th of May, 1798, found her suffering horribly on the left tuberosity of the ischium, the point on which the shock was received. The inferior limbs were of the same length, without any deviation or abnormal twisting of the left. The patient could raise herself altogether, and no crepitation was felt. The surgeon viewed the case as a violent contusion; after eight days the pain was almost entirely gone. She was recommended rest for some time longer, then to rise, and by degrees to walk with great caution.

M. de Block had lost sight of this patient, when, thirty days after the accident, she returned, limping very much. She stated that on the thirteenth day, although she had not quitted her bed, the left limb began to shorten, that then having risen, the more she walked the shorter it got, and consequently the halting became more evident.

She was made to take a few steps; every time she tried to support herself on the left foot the body was so suddenly flexed laterally towards the left side, that it might be said that the superior edge of the ilium approached with violence towards the false ribs. The form and the motions of the left pelvic extremity were as regular and normal as on the first day, only it might be perceived that the crest of the left hip-bone was higher than that of the right. On pressing upon it from above downwards the bone gave way, descended, the level was re-established



between the two crests of the ilia, and at the same time both feet were brought to their natural equal length. On ceasing the pressure the left limb shortened again, but very slowly. By these signs it was recognised that the disease was a diastasis, or a disjunction of the articulation of the left os innominatum with the sacrum. The shortening of the left limb was three breadths of a finger.

After having consulted on the treatment, it was resolved to employ Van Gesscher's apparatus for permanent extension, which consists in maintaining the limb in the horizontal position on a hard bed, the extension being effected by a mechanism resembling Desault's splint. An elastic bandage, eight inches wide, was so placed that its superior edge covered the crest of the ilium, and its inferior edge corresponded with the inferior part of the sacrum. An assistant pulled at this moment on the left foot, and after it was brought to a level with the other, the band was definitively attached round the body, as well as the extending band.

The application was made on the 13th of June; up to the 15th of September it was twice replaced. At this period it was taken off, except the bandage round the body. The patient remained eight days longer in bed, finally she rose and walked, and the motion of her limb was regular, and as strong as before the accident.

CASE II. A young woman, 19 years of age, kneeling in a church on 30th May, 1810, made suddenly a violent effort to carry her hand to a certain distance to the left side. She felt at the moment a very violent pain a little above the right haunch, and heard there a noise like the tearing of a piece of linen. Having returned home, the pain slightly subsided, and she could walk; nevertheless, after ten days, the symptoms persisted: she consulted a physician, who, after trying frictions, advised her to do nothing more, but wait. Yet the right lower extremity had begun to diminish in length, and the shortening went on increasing. M. de Block was consulted on the 29th of June. The right foot was shortened about three breadths of a finger, the motions of the coxo-femoral articulation were executed freely; the patient turned the foot voluntarily inwards and outwards, and raised at once the whole lower extremity, a convincing proof that the shortening depended neither on a luxation nor on a fracture of the femur. The os pubis was normally united, but the posterior part of the right ilium was mobile and painful, and its crest more elevated, and approaching more nearly to the inferior edge of the last false rib than that of the opposite side. On pressing with all his force with his hand on the right iliac crest from above downwards, M. de Block made the two feet resume their perfect level. When he withdrew the pressure, the right foot retracted slowly, and regained its former position. He twice repeated the same manœuvre, and both times the same phenomena took place. The diastasis of the right os innominatum being evident, M. de Block applied, on the 4th of July, the apparatus which had succeeded so well in his hands in the preceding case.

The 11th it became loose, and had to be replaced. The same accident occurred on the 20th, and produced a shortening of about the breadth of a finger and a half. This was attributed to the intractability of the patient, who would only lie with her head very much raised; warning her of the consequences which must result from these continual derangements, she became more reasonable.

The apparatus was again replaced on the 2d of August, and left on till the 3d of October. The cure was complete, nevertheless the patient was made to keep quiet for five days longer. She then rose and walked, and was soon able to resume her ordinary occupations.

CASE III. (By M. Kluykens, the father of the author of the present memoir.) A conductor of a diligence was precipitated from the box on to the pavement. There was sacro-iliac diastasis, and a cure was effected in six weeks.

CASE IV. (By the same.) The patient was a labourer, who received on the inferior part of his back a rather heavy beam from a certain height. The case was serious; there was also comminution of the spine, and a cure was not effected until after the expiration of six months.

CASE V. (By M. Verbeeck.) A healthy young girl, of a lymphatic sanguineous constitution, after a slight effort, followed by a fall, felt a pain in the haunch. Walking became impossible; she was carried to the hospital. M. Verbeeck found a sacro-iliac diastasis. The cure was slow, but it was effected simply by bandaging the body. We believe, however, that a weight was suspended by a pulley

to the extremity of the foot for the purpose of extension, but was subsequently discontinued.

These three last cases will, doubtless, appear too succinct. We have extracted them *verbatim* from the report of M. Meulewaeter. As the true riches of science, in an injury so little studied, consists especially of facts, we think it more useful to mention here all the cases of sacro-iliac diastasis which have come to our knowledge, than to endeavour to build up a general history for which sufficient materials are still wanting. Besides the five preceding cases, those cited by authors are: 1st. That of Philippi, surgeon at Chartres, recorded in the fourth volume of the "*Mémoires de l'Académie de Chirurgie*." 2d. Another, but very doubtful one, as to the nature of the disease, reported by Bassius, in 1731, in the same volume. The affection was, probably, nothing more than what is commonly called a strain of the loins. 3d. The case observed by Enaux, Hoin, and Chaussier, inserted in the "*Recueil des Mémoires de l'Académie de Dijon*," in which the weight of the limb, while the patient walked with crutches, acted so as to produce reduction, and to cure the shortening which was manifest at first. 4th. A case reported by L'Héritier, in which, after a fall, the ilium presented an extreme mobility on the sacrum. 5th. The example cited by M. Larrey of a soldier, in whom the shock of a spent bullet had produced a similar displacement. 6th. A case published by Mr. Harris, in the "*Journal of the Medical and Physical Sciences of Philadelphia*," vol. xiv. 7th. A fact reported by Mr. Braket, where, at the same time, the symphysis pubis was disjunct, as proved by the autopsy. (Transactions of the Medical and Physical Society of Calcutta, and *Gazette Médicale de Paris*, 1833, p. 52.) 8th. Two cases by M. Heidenreich. (*Gazette Médicale*, 1839, p. 634.) Very interesting to consult, since in both the diagnosis was not free from doubt.

This recapitulation, which we have made as complete as possible, may be useful to those who are desirous of studying the whole of this subject, the history of which classical authors have barely sketched.

## SECT. II.—THE NATURE AND CAUSES OF SURGICAL DISEASES.

ART. 53.—*Fatal Results from Fracture of the Nasal Bones.* By J. H. ROGERS, Esq.

(*Lancet*, April 24, 1847, p. 429.)

[After the following remarks, Mr. Rogers gives the details of four cases of fracture of the nasal bones, treated at the Middlesex Hospital, three of which terminated in death.]

The nose, from its exposed position, is not unfrequently injured by blows or falls, the cartilages being separated from the bones, or the bones themselves fractured. Although fracture of the nasal bones, being necessarily the result of direct violence, is generally attended by considerable tumefaction and disfigurement from effusion of blood, it is seldom that any serious consequences result from such an accident. Occasionally, however, it happens that blows on this organ, which may perhaps have occasioned but slight external injury, are followed by symptoms indicative of inflammation of the brain, or of its investing membranes. This arises from the connection between the septum of the nose and that portion of the floor of the skull formed by the cribriform plate of the ethmoid bone. A blow on the nose may force up the septum and fracture this delicate plate of bone. The possibility of such an occurrence is alluded to by most systematic writers on surgery, but is usually spoken of rather as an accident which might happen, than as one which is likely to be met with in practice. Within the last few months, four cases of injury of the face, with fracture of the nasal bones, have been admitted into the Middlesex Hospital. Three of these have terminated fatally, from inflammation of the membranes of the brain; and in all there was found fracture of the cribriform plate of the ethmoid bone. In two of these fatal cases, the visible injury done to the nose was so trifling that fracture of the *ossa nasi* was not suspected during life. The danger in these cases is not to be estimated by the amount of external injury. It is dependent not on the degree of force pro-

ducing the injury, but on the direction in which that force is applied. The nose may be completely crushed by a blow acting laterally or from above, and the cribriform plate escape uninjured, but a much slighter blow, so applied as to drive the septum directly upwards, may fracture the cribriform plate from which it depends, and the result may be death from inflammation of the membranes of the brain. It is probable that accidents of this kind are much more frequent than is generally suspected, as, from the nature of the lesion it is very likely to be overlooked in the hurried manner in which post-mortem examinations are frequently conducted.

[Chelius states that fractures of the bones may be accompanied with symptoms of pressure or concussion of the brain, which depend on the propagation of the violence to the brain, and not on the pressing in of the walls of the nose, or of the cribriform plate.—South's Chelius, vol. i. p. 526.]

ART. 54.—*Dislocation of the Sixth Cervical Vertebra on the Seventh.*

By M. CARASSUS.

(*Gazette Méd. de Paris*, 27 Mars, 1847, p. 239.)

A mason, aged 44, was taken to the Hôtel Dieu, at five o'clock in the evening of July 6th, 1846; he had fallen from a first floor on the upper part of his back, and remained where he fell, immovable. His head was bent forwards, and his neck, as it were, sunk. On a level with the sixth cervical vertebra there was a bony tumour of the size of an almond. There was neither ecchymosis nor mobility, nor crepitus, nor lesion of the skin. The patient felt great pain in the part, which was increased upon pressure. Respiration was performed solely by the diaphragm. The lower limbs were completely deprived of sensation and mobility; the upper limbs maintained their functions in a slight degree. The mental faculties were intact, pulse feeble and frequent, extremities rather cold. On the following morning he was in the same state; the bladder was paralysed. Death occurred thirty-four hours after the accident.

*Autopsy.*—Sanguineous infiltration of the soft parts between the skin and the spine. The spinous process of the sixth cervical vertebra was separated from that of the seventh by a hollow, into which the finger could be introduced, and touch the cord. The two vertebræ were completely dislocated; they were separated in such a manner that the spinous process of the sixth presented forwards and upwards, while that of the seventh was curved downwards and backwards. The articular processes had also lost their contact, and in separating had followed inverse directions. Thus those of the sixth vertebra were carried forwards by gliding from below upwards; those of the seventh had, on the contrary, taken an opposite course. There was no fracture, except of the left transverse process of the sixth vertebra, which was only broken at the edge.

The cellular tissue exterior to the dura mater in the spinal canal was much infiltrated with blood; the posterior face of the cord presented a contused surface, about a centimeter square, corresponding with the space comprised between the spinous processes of the two dislocated vertebræ; it was softened and had a bluish aspect. Nothing of this kind was observed on the anterior surface. The fibro-cartilage which unites the bodies of the sixth and seventh cervical vertebræ was divided into two parts of nearly equal thickness, one of which remained united to the superior and the other to the inferior vertebra. The body of the sixth projected from before backwards, so as to compress the cord in this direction.

ART. 55.—*On the Influence of Gravity and a Decumbent Position on the Circulation and on Surgical Diseases.* Read at the Royal Academy of Medicine, May 25th, 1847. By P. M. GERDY, Surgeon to l'Hôpital de la Charité.

(*Revue Méd.-Chirurg. de Paris*, Juin, 1847, p. 332. Condensed.)

This paper contains many general principles, the rigorous deduction from special facts which I have observed a great number of times, although I recite instances only.

The weight of the fluids which circulate in the animal economy arrests their course, retains them, and causes them to accumulate in the inferior parts of the



body, and especially in the limbs, even during the most perfect health—this constitutes hypostasis. Thus the hands and the feet become congested, swollen and red, when they are at rest in a decumbent position; on the contrary, they become pale, cold and diminish in volume, if kept in an elevated position. The extent of the influence of the weight of the fluids, or of the decumbent position of parts in the production and aggravation of many diseases is still unknown. The effects produced are—1. Simple neuralgias, headaches, and hemicranias. 2. Serous infiltrations. 3. Sanguineous congestions. 4. Migrations of ecchymoses, which find the lowest level. 5. Hemorrhages. 6. Varicose dilatations of the veins. 7. Chronic inflammations, fungous ulcerations, superficial or deep. 8. Ulcers of the limbs. 9. Acute inflammations, known under the terms panaris, diffuse phlegmon, phlegmonous erysipelas. Gravity frequently acts only as the predisposing cause, but sometimes as the exciting cause.

1st. The position of the head when bent for a long time during any labour is sufficient to occasion considerable headache, or to increase it. Lying in a horizontal position too long will produce this effect. This kind of headache is always the result of sanguineous congestion, produced under the influence of gravity, which retains the blood in this part; in this instance it is the exciting cause.

2d. Gravity alone cannot produce an aqueous infiltration into decumbent parts; but obstacles to the return of the blood to the heart predispose the decumbent parts to infiltration, and the upright position does not fail to excite it. The influence is so great that, on assuming a horizontal position, œdema of the limbs will disappear in from twelve to twenty-four hours. The effect is still more marked when, the patient being in that position, the limbs are placed on a plane inclined upwards. But by raising the lower limbs the œdema is transported to the commencement of the thighs, the hips, and the exterior of the pelvis; by raising the superior extremities, to the arms, the arm-pits and shoulders. Other phenomena which deserve great attention frequently occur in the head, chest, digestive organs, and abdomen. The head becomes dull, sometimes painful; the patient often experiences giddiness, dimness of sight, noise in the ears, suffusions in the face, which indicate sanguineous congestion in the head, and threaten cerebral hemorrhage; the respiration becomes hurried, and effusions into the chest are found on percussion; the appetite fails; sometimes the mouth becomes foul; the abdomen swells, and effusion manifests itself there.

If, at the onset of these symptoms, the limbs are replaced horizontally, or are somewhat inclined downwards, the effects disappear as they came, but it is often necessary to ensure this by resorting to purgatives, bleeding, and other measures.

3d. It is not only in cases of obstruction to the circulation, in diseases of the heart and abdomen, that œdema is produced by a decumbent position, it occurs also in convalescence from long-continued disease; in individuals who have remained forty days in bed for a fracture or diseased spine, for instance. It is sometimes observed eight or ten days after any disease, when the patient begins to walk about, but this kind of œdema generally passes off in a few days. In these cases it would appear that the capillaries have lost the habit of resisting the weight of the blood in the venous columns, and that they gradually recover it by exercise.

The weight of the fluids exercises an influence also in dropsies, properly so called. Thus the effusion consecutive to an operation for hydrocele by injection resists the cure as long as the patient rises from bed, but this may be obtained by absolute rest. The same thing occurs in effusions into the knee-joint, which resist treatment in patients who move about, and are cured by absolute rest.

For the same reason that a decumbent position of any particular part produces serous congestion, it also occasions sanguineous congestions. Headaches and hemicranias are thus produced by congestions in the head. In this manner, also, congestions in the hands and feet are produced.

4th. Under the influence of a contusion, by which the capillary vessels have been broken, and in scurvy, the blood escapes from the capillary vessels, expands in the cellular tissue, and produces ecchymosis, black and violet spots, &c. If the effusion take place in an elevated part, the blood diffuses itself in the parts below by imbibition, and gradually to a greater or less distance, according to the laxity of the cellular tissue; thus in contusions of the head the blood extends itself to the eyelids, behind the ears, and to the neck, and in these situations, when it

stops, ecchymoses are almost exclusively seen; in contusions of the upper part of the trunk ecchymoses extend to the pelvis; in those of the anterior part of the chest they occur on the ribs, and behind, if the patient lies on his back; in those of the shoulders and upper parts of the arms, they extend to the elbow, and of the fold of the arm to the wrist; in those of the hips and upper part of the thigh, over the whole length of the thigh, &c.

5th. In chronic congestions of the uterus, in polypus and carcinoma of this organ, ulcerations, hemorrhoids, ulcers of the legs—the upright attitude and walking, by placing all these parts in an inferior position, occasion repeated hemorrhages. On the same principle, lying horizontally, and especially with the affected parts elevated, suffices to ward off hemorrhages, and to cure the predisposition which has favoured them.

6th. The same cause produces varicose enlargements of the veins and capillaries, the foundation of hemorrhoids, &c. There are two anatomical circumstances to account for the veins of the feet, although belonging to the most dependent parts, not becoming dilated from this cause: first, they are much more numerous than those of the legs, the column of blood is sustained by a much greater number of vessels, so that the resistance is much more disseminated; secondly, each vein resists the weight of the blood, proportionably as it is small, since its coats are proportionally thicker, as compared with its cavity. There can be no doubt that if the elevated position could be sustained for a sufficient length of time the result would be a cure of these incurable affections.

7th. We have seen that the inclined and dependent position of parts is sufficient to occasion sanguineous congestions; in the long run, the same cause, co-operating with these mechanical and passive congestions, terminate by producing—true inflammations, which occur in certain parts without blows or external violence, but more certainly still under the influence of violence—puriform secretions at the neck of the uterus—or fungous ulcerations, with sanious, sanguinolent secretions; such, for the most part, is the origin of puriform, whitish, and sanguinolent discharges, ulcerations and fungosities of the neck of the uterus, and fungous ulcerations of the legs. These affections are singularly relieved, and frequently cured, solely by a horizontal position persisted in for a sufficient length of time.

8th. Nevertheless, the greater number of ulcerations of the legs do not depend upon position alone. The latter is only a predisposing cause. Even varices, which so frequently complicate ulcers, act as a predisposition only in most cases. The most frequent exciting cause of ulcers is a blow, followed by ulceration and suppuration, or a wound, however small it may be. But these causes alone will be insufficient to produce an ulcer having no tendency towards a cure, and the patient would be soon cured if he maintained a horizontal position, especially with the legs raised. The influence of a dependent position, or the action of the weight of the blood, is absolutely essential for a wounded part to become congested, and that the lesion may become an ulcer, which ulcerous inflammation is most frequently subacute or chronic.

9th. The inflammation is frequently acute, and leads to mutilation or death, and, singular to say, the principal cause of these terrible affections and the true principles of their treatment are nearly altogether forgotten. The dependent position so aggravates the slightest cases of physical lesion—contusions, abrasions, the pricks of pins and needles, of the lancet at the fold of the arm, of the fingers, of the veins at the malleoli, the cutting of corns—producing, as complications, erysipelatous or phlegmonous inflammations, lymphitis, phlebitis, which affections it also aggravates, that we believe we shall render an immense service to science and humanity by putting this important truth in the clearest light.

Patients constantly enter our hospitals for enormous inflammatory, red, hot, shining swellings of the hands and feet, so little painful as to allow them still to work and move about. These are generally consequent upon slight wounds, and it frequently happens, when not sent to bed, that the inflammation continues to diffuse itself, and makes such progress in a few days that the patient is in the most dangerous state. He is then uselessly submitted to the most active, it may be to the most cruel antiphlogistic treatment, as, for instance, the multiplied incisions which are employed in these terrible diseases.

In reference to position as the cause of these affections, at least as many contu-

sions of the head and trunk as of the feet and hands are met with, but diffuse phlegmons or severe cellular inflammations rarely occur in the head and trunk, nor in the upper part of the limbs, while they are very frequent in the two inferior thirds of the latter.

Yet the cellular tissue is less abundant in the inferior parts of the extremities than in the trunk; but the extremities are almost always placed in a vertical direction, or in a dependent position; there is always a tendency to engorgement by the weight of the blood, which very rapidly accumulates in them under the influence of the slightest wound. Should it be objected that whitlows, or inflammations of the fingers, are attributable to the dense texture of these organs, it is possible that this circumstance may have some influence over the intensity of the pain, but nothing proves that the close adhesions of the skin to the subjacent fibrous tissue renders the inflammation more frequent. The fibrous tissue everywhere, except in the hands and feet, inflames with difficulty; the sheaths on the hands and feet often maintain a resistance in the midst of pus which "bathes and surrounds them." In the hairy scalp, where the skin is very vascular, and has a structure and connections analogous to those of the fingers, we see nothing analogous to whitlow. The sheaths of the tendons favoring the passage of pus in the palm of the hand, explains well the propagation of the inflammation to the palm. The same thing in the feet explains the same phenomenon, although more rare, but it does not explain the propagation of the inflammation and suppuration to the forearm and the leg, to which, however, they extend so frequently.

The fibrous sheaths of the muscles, in particular, explain much less the frequency and the gravity of cutaneous and cellular inflammations of the two inferior thirds of the extremities, inasmuch as the thighs, the shoulders, and the trunk have very strong sheaths, and here inflammations are much less common. Lastly, the intensity of erysipelato-phlegmonous inflammations, or diffuse phlegmons of the back, feet, hands, legs, and forearm, in consequence of a bleeding or slight wound, cannot be explained by the dense and resistant structure of the skin of these regions, since their skin, on the contrary, is very fine and loose, as is also the subjacent cellular tissue. There is but one cause common to these parts which can explain theoretically the serious character of the inflammations which occur in them, that is to say, their dependent situation which, with the weight of the blood, so manifestly promotes sanguineous hypostasis.

The most convincing proof that I can give of the influence of a dependent position on the inflammatory diseases attacking the two inferior thirds of the extremities, is the successful employment of therapeutical influences, which by their action are directly opposed to the weight which occasions these inflammations, to terminate by suppuration, ulceration, and death. When patients are received into the hospitals with the foot or leg, the hand or forearm swelled, red, hot, moderately painful, and tense, it is often sufficient to make them lie down and place the whole limb in a horizontal position, when the disease appears to be cured in twelve or fifteen hours, but it is necessary to be aware that it is not so; for if the patients are sent out of the hospital, as not being bad enough to occupy a bed for a longer time, they return some days afterwards with a diffuse phlegmon too severe to be arrested in its course.

When the disease is a little more advanced than in the first case the horizontal position of the limb alone is insufficient, but we may frequently obtain a cure in seven or eight days by placing the limb on an oblique plane rising so much the higher as the inflammatory symptoms are the more marked. In diffuse phlegmons of the hand I even suspend the hand vertically by the fingers, and in those of the forearm by the hand and the wrist, to the head of the bed. Under the influence of this powerful measure phlegmonous erysipelas becomes pale and cool, the limb diminishes 2, 4, 6 centimeters in circumference, and even more, in a few hours, the skin becomes loose and soft, the pain diminishes, and the inflammation subsides in a few days, for want of aliment to sustain it. I have, by this means alone, cured, in a durable and definitive manner, incipient and diffuse phlegmons in eight, ten, or twelve days, but to be sure that the cure is perfect, it is well to make the patient walk about for several hours the same day at intervals. If the redness, sensibility, or swelling do not return, the cure may be regarded as perfect. The patient should be advised to return only gradually to his usual occu-



pations, or even to keep the limb bound up for some days with a spiral bandage. In this way we have arrested a whitlow which has not allowed the patient to sleep for many days, and the first beneficial result has been return of sleep.

Lastly, I have frequently cured by this means alone ulcers of the legs, and I have seen some as large as the palm of the hand cicatrize in eight days, by the formation of a new membrane on all the points of the surface of the ulcer at once, and not by its gradual formation from the circumference to the centre.

If an elevated position is a curative means in the first stage of whitlow, phlegmonous erysipelas and diffuse inflammation of the extremities, it has not the same influence when the cellular tissue is softened, and suppuration has commenced, and especially later, when the cellular tissue is gangrenous, it is then only a useful adjuvant; but a skilful surgeon, applied to at the commencement of the disease, ought not to allow it to reach these grave and fatal periods. On the same principle, all those parts which an inferior and pendent position renders subject to the various affections mentioned in this paper, ought as much as possible, to be elevated, or at all events placed horizontally, when they are attacked by these complaints. It is a principle of general therapeutics which practitioners should constantly bear in mind, since it is not the result of mere supposition, more or less probable, but of the most rigorous deduction from a multitude of individual cases, and may be applied daily with success to a great number of different affections, as we have a hundred times demonstrated in our clinic at l'Hôpital de la Charité.

ART. 56.—*Punctiform Corneitis*. By Professor DESMARRES.

(*Traité Théorique et Pratique des Maladies des Yeux*, 1847, p. 271. Condensed.)

This disease is recognised with difficulty, and is most frequently confounded with an amblyopia, or an incipient congestive affection of the retina.

*Anatomical symptoms*.—From the commencement of the disease there may be seen at the centre of the cornea, if examined with much attention, a few small spots, or little grayish or bluish points of the size of a needle's point, which neither project nor are they depressed. The cornea where they are observed seems to have been pricked. Its transparency is preserved throughout, even between these little opaque spots, which sometimes appear to be situated on the external surface, and sometimes much deeper, under the laminae of the cornea. Numerous observations lead me to think that their seat is always on one or other of the surfaces of the cornea, under the serous membranes, most frequently under the membrane of the aqueous humour; and in this case the disease is easily recognised by looking at the cornea sideways, the external lamellæ having retained their natural transparency. It is a disease commencing in the serous membrane, subsequently involving the proper tissue of the cornea, and propagating itself by the membrane of Descemet to the other serous membranes of the eye. These small points gradually increase in number and approach each other, and they become of a grayish or deeper bluish tint.

*Superficial punctiform corneitis*.—This is a less serious variety of the affection than the one presently to be described. The points under the conjunctiva, and before the pupil, are less numerous; but left to itself, the disease progresses and assumes all the characters, and entails all the consequences, of the deep-seated variety.

*Deep-seated punctiform corneitis*.—In addition to the points just described, this disease presents all the symptoms attributed to inflammation of the membrane of the aqueous humour (*aquo-capsulitis*). The points, more numerous than in the preceding variety, and of a deeper blue colour, are produced by inflammation of the proper tissue of the cornea, and rarely pass off by resolution. The cornea, examined from the side, is smooth, as in the first variety, and presents no opacity on its external surface; it is on the concave surface that the transparency is diminished. The small points frequently multiply so as to form a kind of very light bluish-gray cloud. With the aid of a glass there can be recognised transparent parts between the points, and these may be seen even with the naked eye; the remainder of the cornea assumes, especially in the vicinity of the points, a light greenish tint, as in general inflammations of this membrane; the iris appears a little dull and discoloured. The opaque points of deep-seated corneitis frequently

appear in iritis, especially when this affection is connected with syphilis. *Conjunctiva*.—The palpebral portion is never affected; the conjunctiva of the globe, near the cornea, when the affection is severe, assumes a pale rose tint, more marked as the inflammation progresses. *Sclerotica*.—When slightly injected around the cornea, the iris is beginning to be affected. *Iris*.—This should be carefully examined in the first stage of the disease. Its tissue becomes of a pale red tint, greenish, dull, and in all respects resembles the appearance observed in what is called serous iritis. The concentric fibres are more defined than usual. The inflammation, which begins in the serous covering on the posterior surface of the cornea, extends, by continuity, to the anterior surface of the iris; and it is in this point of view that the disease demands the most serious attention. Punctuated corneitis very rarely commences by inflammation of the iris. *Pupil*.—Almost always sluggish, since the light penetrates in smaller quantity, and the iris being affected with a certain degree of vascular turgescence, the pupil almost always contracts adhesions to the capsule; and in some cases, where the disease is severe, these multiply so that the whole margin becomes adherent posteriorly, and may lead to a complete obliteration of the pupil and loss of vision. *Membrane of the aqueous humour*.—This is evidently inflamed, as shown by the condition of the posterior surface of the cornea and the anterior surface of the iris. The whole anterior surface appears to be disturbed. The capsule is for a long period free from the inflammation, but ultimately becomes affected with whitish plastic exudations. *Jacob's membrane* participates less frequently in the affection. I have observed some cases wherein the retina, folded, yellowish, projecting into the vitreous body, and raised by a collection of fluid seated under the choroid, quavered in the bottom of the eye. The retina presents all the physiological signs of inflammation which occur in amblyopia, and even in amaurosis. Thus the disease is seated in the serous membranes of the eye, commencing by slight effusion in the form of points, sometimes on the anterior, and sometimes on the posterior surface of the cornea; after the serous membranes of the cornea, those which cover the anterior face of the iris, then the capsule of the lens, and ultimately Jacob's membrane, become the seat of inflammation, and, like inflammation of the pleura, this is accompanied with considerable liquid effusion.

*Physiological Symptoms*.—At the commencement, when the specks are but few, the patient complains only of a transparent cloud. Sometimes he describes the presence of muscæ volitantes, and then the affection is frequently mistaken for amblyopia; there is neither intolerance of light nor lachrymation. When the opaque spots increase there is more disturbance of vision. By degrees the patient becomes myopic, and the sight so far defective that he cannot guide himself. When the iris becomes inflamed intolerance of light occurs, the eye becomes red in all the parts mentioned, and there is slight lachrymation.

*Progress—Duration*.—The disease is in general extremely insidious; for some time all the symptoms are referable to the opaque spots. When the conjunctival surface only is affected, it generally proceeds more rapidly to resolution, but when it begins in, or is propagated to the aqueous humour, it takes an extremely long period, under any circumstances, to attain this. I have a case of three years' standing, which nothing has hitherto been able to arrest in its course; the left eye is completely lost in consequence of the obstruction of the pupil; there are now thirty opaque points in the cornea, which still maintains all its healthy transparency, except at its inferior part; large adhesions between the iris and the capsule exist in the right eye; the retina has suffered remarkably. If I had not kept the pupil dilated with belladonna, it would by this time have been obliterated; nothing has succeeded in curing this rebellious disease.

*Etiology*.—The causes are numerous. Certain constitutions appear to be more predisposed to it than others, especially scrofulous individuals, or those in an habitually bad state of health. It is rare that it does not occur in iritis in subjects affected with syphilis, and it is often met with after depression of a cataract, the lens acting as a foreign body, it then becomes a case of chronic internal ophthalmia.

*Treatment*. 1. *Local*.—When the disease proceeds slowly, and is limited to the external surface of the cornea, local excitants sometimes succeed well, such as laudanum, precipitate ointment, and astringent collyria instilled into the eye for a

few hours, and abandoned as soon as they produce a sufficient degree of excitement. Blisters round the orbit, renewed every two days, and when the iris is becoming slowly affected, superficial moxas to the forehead are very useful. Belladonna must be employed early, and continued with perseverance as long as the freedom of the pupil is threatened. In some aggravated cases a seton in the neck has appeared to be useful. In the acute stage leeches may be applied to the temple; but this remedy must not be abused: the kind of constitution in which the disease occurs must not be forgotten.

2. *General treatment.*—Bleeding at the arm has never appeared to do any good, and is even dangerous. As soon as a few saline purgatives, the moderate application of leeches and mercurialized belladonna frictions have diminished the sub-inflammation of the internal membranes, and the pupil is dilated, a general tonic treatment is to be prescribed, including quinine, senega root, iron, beef-tea, and a little generous wine. The patient should be placed under the best possible hygienic conditions. In females, more particularly, anemia accompanies punctiform corneitis, and requires the prompt and effectual administration of ferruginous medicines.

ART. 57.—*Unusual Injury of the Knee—Comminuted Fracture immediately below the head of the Fibula, and partial Dislocation (!) of the head of the Tibia backwards.* By T. B. EDWARDS, Esq. Berehaven.

(*Prov. Med. and Surg. Journal*, July 7, 1847, p. 5.)

I was called, on the 28th of April last, to visit Daniel Oweng of Ballydanigan, who, in the early part of the morning, received an injury from the falling of a bank on his left knee and leg. Having made an examination of the injured part, I found the knee-joint considerably swollen, evidently from synovia being effused; though not very painful on pressure. Where he complained most was just corresponding to the head of the fibula, on which was a soft elastic tumour, which appeared to communicate with the joint. On a further examination, a comminuted fracture of the fibula, about *half an inch below its head*, was readily detected. From his own statement, I should rather think there must have been also a partial dislocation of the tibia backwards, and the fracture may have occurred coetaneously with, or subsequently to it. His statement is as follows: That whilst at work with a pick, about twelve fathoms under ground, his body being flexed upon the pelvis at the time, he was alarmed at receiving a blow with a stone on the back from above. Taking this as a symptom of what was likely to follow, he immediately attempted to jump backwards out of danger, as he thought, but before he could attain the wished-for object, and whilst the body was inclined *backwards*, he was overtaken by the rest of the bank, which struck him on the knee, and prostrated him. His lower extremities were nearly covered with earth and stones, but the thigh of the injured side was free. In endeavouring to extricate himself (for he was alone at the time) he encircled the lower part of the free thigh with both his hands, and whilst so doing he felt a *hard lump* in the ham. He then tried to release his leg by making extension from the thigh, and whilst thus engaged (the heap of earth, &c. on the leg acting as a natural counter-extension power, I presume,) he heard a loud snap, and the swelling in the ham *immediately* disappeared.

ART. 58.—*Subluxation of the Humerus Forwards and Inwards.*  
By C. H. HALLETT, Esq., Demonstrator of Anatomy in the University of Edinburgh.  
(*Condensed from the Month. Journ. of Med. Science*, Aug. 1847, p. 91.)

It is my intention to detail, in this notice, the different circumstances connected with partial dislocation of the humerus forwards and inwards, two examples of which have been examined in the dissecting-room of the university. The morbid appearances and general characters of this subluxation are unnoticed in the works especially devoted to the consideration of such injuries, probably on account of its not having yet attracted attention. A well-marked instance of it was met with, about three months since, in the right upper extremity of a man who had been evidently possessed of great muscular strength during his lifetime. I found the



lesions in the parts about the shoulder-joint to differ greatly from any I had previously read of. A precisely similar state of matters had been previously observed in the dissecting-room, and a preparation of the parts concerned in the lesion had been placed in the anatomical museum.

The articulating surface of the head of the humerus was displaced entirely from the glenoid cavity of the scapula, was thrown forwards by extreme rotation outwards of the arm, and was driven inwards so as to overhang and project into the subscapular fossa, and to cause the protrusion forwards of the anterior wall of the axilla. The head of the humerus was prevented from gliding in the glenoid cavity during the execution of any of the movements of the limb in consequence of striking changes in its form. A large segment of bone had been removed from the external and posterior part of the head of the humerus, and from that portion of the anatomical neck which intervenes between the head and the greater tuberosity. More than half an inch had been ground down or absorbed to the level of the shaft, and this had been so regularly and evenly performed, that it appeared rather to have been affected by mechanical means, as by a saw applied at first longitudinally, and then transversely, through the whole depth of the head of the bone, so as to remove a prismatic portion of it, than by the increased action of the absorbents induced by constant attrition of the anterior lip of the glenoid cavity against the anatomical neck and head of the humerus. The whole of the depressed surface was covered with cartilage, and presented here and there a number of grooves of a brownish colour, where the cartilage was apparently deficient. These grooves indicated so many places in which the absorbing action was exerting its influence in removing the bone immediately before the individual expired.

The loss of this portion of bone had caused a material alteration in the configuration of the head. It no longer possessed its rounded hemispherical form, but had become irregularly ovoidal. The head of the bone appeared at first sight to have been considerably elongated, and this elongation seemed to have caused the alteration in its shape; but, on closer examination, the appearances were found to be deceptive. A large depression, therefore, existed on the inner and posterior part of the humerus; this depression presenting two surfaces, one longitudinal, which impinged against the anterior smooth surface of the neck of the scapula, the other transverse, which rested on the anterior half of the glenoid cavity, the corresponding lip of which was received into the angle formed by the meeting of these two surfaces. The glenoid cavity had not escaped from the effects of attrition, for that portion of the anterior lip which projects somewhat into the axilla, and is the strongest part of the cavity, had been absorbed, and thus reduced to the level of the surface of the neck. I might briefly state, that the glenoid cavity in a perfect scapula is somewhat pyriform, that its inferior two-thirds represent a segment of a circle, whilst the superior third is a segment of an ellipse. Now in both the cases I have examined, the projecting border of the circular portion had been removed and brought on a level with the ellipsoid portion, so that the glenoid cavity and the neck of the scapula had an elliptical form, which appeared, like the change in the form of the head of the humerus, to have arisen from an increase of their longitudinal diameter; but I found from admeasurements that this diameter was not increased—that it bore its usual relation to the size of the scapula. Besides these, some other changes require to be mentioned. The greater tuberosity of the humerus was situated in the posterior half of the glenoid cavity. It had its form altered in such a manner as to permit it to perform the movements which the joint, in its existing state, would admit of. The three surfaces into which the supraspinatus, infra-spinatus, and teres minor muscles are inserted, were all merged into one smooth surface, covered by the tendons of these muscles. The lower part of this surface, which projected somewhat from the upper, chiefly occupied the glenoid cavity.

There was no effusion of blood in or around the shoulder-joint; no abnormal development of ligamentous tissue, nor any other change but such as I have mentioned, external to the joint. The lower portion of the capsular ligament of the joint, which had not the slightest appearance of having been ruptured, was united to the apparently thickened tendon of the subscapularis muscle, and with

it supported the head of the humerus as in a sling, and bound the greater tuberosity firmly down to the glenoid cavity.

Such are the morbid appearances and alterations seen in and about the two joints I have carefully examined. Rotation, circumduction, and abduction were all in abeyance; adduction was imperfectly performed, and flexion and extension were the only movements that could be executed by the limb in anything approaching the normal way. The position and changes in the muscles, and the manner in which the glenoid cavity and the head of the humerus were locked together, united to cause this paucity of motion. Thus the arm could not be rotated inwards, because the longitudinal surface of the depression on the head of the humerus abutted immediately against the neck of the scapula, and controlled all motion in that direction. The attempt to rotate outwards was equally ineffectual, for the subscapularis and pectoralis major muscles were already too much stretched to permit the external rotatory muscles to act efficiently: circumduction, depending on the power of moving the limb freely in every direction, could not be performed for the same reasons; every attempt at abduction was successfully resisted by the subscapularis, pectoralis major, and by the longitudinal surface of the depression on the head of the humerus. The other movements, not being restricted or controlled in any way, took place for the most part in the usual manner. It is to the power of flexing and extending the limb whilst the other movements were imperfect, that we must refer the production of the depression on the head of the humerus.

The deformity occasioned by this form of subluxation greatly resembles that induced by complete dislocation forwards of the humerus. The acromion process was prominent and angular; and the deltoid muscle was flattened, whilst the anterior wall of the axilla was rendered prominent by the head of the humerus pushing it forwards—characters also peculiar to the dislocation forwards. Indeed, on comparing casts of these two dislocations, it was found that the external characters about the shoulder were so similar, and corresponded so closely, that it would be impossible to distinguish them at first sight. The surgeon, however, would have no difficulty in recognising this subluxation, since, on placing his fingers in the axilla, he would discover the head of the humerus in the immediate vicinity of the glenoid cavity, the borders of which he would be unable to feel; moreover, he would find the limb everted to a great extent, the hand and arm being turned from the body and looking outwards, whilst the elbow was placed against the hip, and would be unable to rotate it inwards, provided the displacement had been of long standing. The deformity also resembles that occasioned by partial dislocation forwards of the humerus, but the circumstances of the limb being everted, and of flexion being perfectly performed in the subluxation forwards and inwards, will point out the means of distinguishing them.

A blow, or a fall, insufficient to cause complete luxation of the head of the humerus, might still be accompanied with sufficient force to drive it into the abnormal position it was found to occupy in these two cases. I have no doubt that the displacement may be caused by direct injury, but I am also led to believe that it might originate in another manner. There is a trial of strength performed in Scotland, and, I believe, in Scotland only, which those who practise it designate by the unmeaning phrase of "putting you down." It consists in two individuals seating themselves opposite each other, joining their right hands together in a peculiar manner, closely approximating and fixing their elbows on a table, or any other stationary object, and then attempting to twist each other's arms down to the object on which their elbows rest; the individual who can twist outwards his antagonist's arm in this amicable manner into the required position being declared the victor. Now I conceive that this trial of strength may induce subluxation of the humerus forwards and inwards. During its performance all the muscles of the arm and shoulder are violently and continuously contracted. If the arm should then be suddenly and violently rotated outwards and extended, we might expect that the muscles so suddenly stretched would suffer considerable injury. I believe that the subscapularis and pectoralis major muscles might be rendered inert by this violent over-extension, and that these muscles being inactive and the force being continued, the head of the humerus might be readily displaced. The head of the humerus can certainly be thrown into the abnormal position before described by

rotating the arm suddenly outwards, after the pectoralis major and the subscapularis muscles have been detached from their humeral attachment. I have tried the experiment several times in the dissecting-room, and have never failed to displace the head of the humerus from the glenoid cavity, and to twist the greater tuberosity into it, without rupture of the capsular ligament. We have only to presume that this can be done, under certain circumstances, in the living body, and we have all the conditions necessary to induce the deformity and the changes observed in the articulating surfaces of the shoulder-joint.

Little can be said about the treatment to be adopted by the surgeon, for the restoration of the perfect use of the limb, if he should chance to meet with a case of this subluxation in a living individual. The luxation may be reduced by lifting the head of the humerus out of its abnormal position by the aid of a towel, the arm being rotated inwards and carried across the trunk; and when reduced, might be treated according to the common principles of surgery, although it is more than probable that the displacement would remain permanent, in consequence of the changes in the joint, unless it came under the notice of the surgeon at an early period.

Before concluding this imperfect notice, I would remark, that whilst the opinion I have advanced respecting the cause of this subluxation is purely hypothetical, the changes induced by it, and the characters by which it may be recognised, are taken from direct observation made on two well-marked cases. My only intention in recording these observations, is to bring under the notice of the surgeon the existence of, and the character by which he may distinguish this subluxation of the humerus, and under the notice of the surgical pathologist, the occasional existence of lesions in the articulating surfaces of the bones entering into the formation of the shoulder-joint, which have been hitherto undescribed.

ART. 59.—*On the Nature and Causes of Simple Lateral Curvature of the Spine.*

By EDWARD F. LONSDALE, Esq.

(Condensed from the Author's *Observations on the Treatment of Lateral Curvature of the Spine*, 1847.)

[After remarking that simple lateral curvature unaccompanied with disease of the bones or ligaments is a very common affection, and may be said to be almost peculiar to females, and that it is almost always found to be on the right side, the convexity of the bend facing to the left, Mr. Lonsdale illustrates the affection by the following very simple and very common example.]

A girl at her needle sits for hours together with the head hanging forwards; the left arm is but little used, and drags the shoulder of this side downwards, and tends to make the chest of the left side contracted by weighing and pressing on the ribs; the muscles of this side of the body are not called into action, therefore one-half of the trunk is comparatively passive. The reverse taking place on the opposite or right side of the body, the right arm is in constant use, being principally employed in a position before the chest, the weight of the upper extremity is taken off the ribs, both by the pectoral muscles as well as by those muscles which raise the clavicle and scapula. These circumstances favour the curvature of the spine to the right side in two ways: first, they increase the expansion of the right side of the chest, by giving freer motion to the ribs; and, secondly, the left side becomes gradually more contracted, owing to the dead weight which is thrown upon it from the arm being so little used and constantly dependent. Combined with these, there is another and internal cause acting, viz, the greater expansion of the lung on the right than on the left side, owing to the pressure on the ribs; and this is very important where the above position is continued for a length of time; for although it may act but slightly at first, it will tell in an increased ratio when the two sides of the chest become materially altered in size, for the less respiration there may be in the left cavity of the chest, the greater duty the right lung will have to perform, and necessarily increase the expansion or convexity of the ribs, and the convexity of the spine, at the same time, on the right side, which is the curvature now under consideration. If this be a correct explanation of the manner in which the curvature may sometimes commence, it is easy to see how, when once begun, it may go on rapidly increasing till those



frightful deformities are produced which are so often met with, where we find the ribs on the left side so much compressed that but little air can enter the lung, and the heart itself becomes pushed to the right side of the sternum; in fact, almost the whole function of respiration is performed by the right lung in these extreme cases of deformity, or if by the left at all, it is pushed completely over to the right of the median line of the body. The irregular expansion of the lungs in the two sides of the chest has rarely, if ever, been before advanced as a cause tending to produce or to increase the curvature after it has once commenced. That the want of expansion in one lung, and consequently of the ribs of the same side, is a cause sufficient to destroy the natural balance of the spine, is seen in cases of collection of fluid within the chest, in empyema, or hydrothorax, where, if the patient survive the disease after the evacuation or absorption of the fluid, and the lung do not recover itself, the ribs become contracted on this side, and the spine is thrown over to the opposite, causing a curvature in that direction.

The principal causes of the lateral curvature of the spine may be stated under three heads, viz.: 1st. The predisposing causes. 2d. The proximate or immediate causes. 3d. The superadded causes, increasing the curvature when once commenced.

The *predisposing causes* are, general debility of the system, producing weakness of the muscles and ligaments, showing itself more readily in the spine than other parts of the body, owing to the peculiar structure of the vertebral column and to the great weight it has to support, which render it liable to be easily thrown out of its natural erect line. The difference of the pressure internally on the two sides of the thorax against the inner side of the ribs, the left lung containing less air than the right, being smaller in size, while the ribs on the right side receive support also from the liver being pressed against them, give a predisposition to use the right upper extremity rather than the left.

The *proximate or immediate causes* are, any position which throws the spine out of its natural line continued for a length of time, without there being active muscular exercise employed in the intervals to redress any deviation that may have been produced. Sedentary occupations, in which the right arm is used more than the left, whether at needlework, reading, writing, or drawing at a desk or table, while the right elbow is supported and the scapula thrown upwards, at the same time that all the weight is taken off the right side of the chest, and its expansion allowed to be more free, during which the head is thrown to the left side, the left arm is allowed to hang at a lower level, is little used, causing a dead weight to press against the ribs, as well as the position itself throwing the central or dorsal portion of the spinal column over to the right side, and causing a convexity on the left.

Carrying children, or standing constantly in a position which throws the weight of the body more on the left leg than on the right, will bring more strain on the lower or lumbar portion of the spine, and cause the mechanical weight of the head and shoulders to bear the central or dorsal portion towards the right rather than the left side. Finally, tight lacing, or, without being tight, an unnatural degree of pressure by stays, or whatever the nature of the dress may be, when exercised against the ribs and spine while the girl is young and growing, will, for the reasons already given, namely, the less resistance of the lung on the left side, as well as the support the right side of the chest receives from the liver, combined with the increased strength and more constant use of the right arm, be a sufficient cause in many cases to commence the curvature, and in most to increase it.

The *superadded or increasing causes* are, the mechanical weight of the head and upper extremities, which tend daily and hourly to throw the spine more out of the perpendicular line when the curvature has once commenced. Awkward positions, both in sitting and standing, which are now employed by the girl to give herself relief, as well as being instinctively prompted to do so to balance the trunk, and unconsciously to compensate for the absence of the erect condition of the vertebral column, and so to preserve the centre of gravity, which unfortunately does but at the same time greatly increase the curvature. Lastly, the muscles of the back themselves, continuing to act in a straight line from the upper to the lower part of the spine, tend greatly to increase the curve, more particularly the set of muscles on the left side, which draw the upper part of the spine towards the lower,

like a string acting upon a bow. The muscles, also, on the right side tend to increase the deformity, when there is a disposition for a second curve to be formed by the lumbar portion occupying a situation to the left of the median line, and in severe cases this portion of the muscles may partially ride over, or be completely displaced to the left side of the spinous processes of the lower vertebræ, placing them in a similar position, with regard to their line of action, to those proper to the left side itself, and acting in the same manner.

After the curvature has once commenced, the muscles situated on either side of the spine, whose natural action is to balance the vertebral column in the erect position, lose the power of so doing, and only tend to increase the curve, by approximating the upper end to the lower as soon as it is thrown out of the erect line; and both sets of muscles, namely, those on the convex as well as the concave side, will have this effect.

That the muscles on the convex side of the spine have not the power to redress the curve is evident, for they are always the strongest, and the most developed on the right side, and that, in spite of this, the deformity still goes on increasing on the left, and in many cases after those on the opposite or concave side have become so much wasted as to cease to have any power to act as antagonists.

[Mr. Lonsdale remarks that while the various causes are in operation which tend to throw the spine out of the perpendicular line, mechanically depressing the left side of the thorax, there are active causes existing on the right side, that tend to increase the curvature in the upper part of the dorsal region.] The right arm is in constant use; all those muscles that are comparatively passive on the left side are in a state of action on the right; the clavicle and scapula are raised by the action of the trapezius and sterno-mastoid muscles, and thus the weight and pressure produced by the upper extremity are taken off this part of the thorax. At the same time the scaleni muscles on this, the right side, are in strong action, and raising the upper ribs; for the above displacement of the two shoulders, viz. where the left drops while the right is elevated, cannot exist without there being a tendency for the head to fall to the left side. To counteract this, the scaleni muscles on the right side are put into strong action, which then keep the cervical vertebræ, and the ribs from falling, as before stated. The sterno-mastoid also produces the same effect, keeping the head erect, only it acts from the sternum and clavicle instead. Combined with these are the diaphragm and abdominal muscles, which I conceive may become powerful agents in increasing the deformity, by pulling the ribs downwards, acting more particularly on the left side, owing to the curvature of the spine favouring the influence of their action.

If the muscles be admitted as agents in producing, and more decidedly in increasing the curvature (which they must be), other muscles will also take part, and act upon the upper portion of the dorsal region, namely, the rhomboidei; for they being inserted into the base of the scapula, and their origin being from the lower cervical, and their larger portion also from the upper dorsal vertebræ, they will, when their antagonists on the left side are passive, tend to draw the vertebræ to which they are attached towards the scapula; since the scapula itself is thrown abnormally forward by the powerful muscles in front of the chest, as well as by the actual mechanical weight of the upper extremity being thrown to the side and front of the thorax.

In this, which may be called the first stage of the curvature, so little apparent deformity exists, that it is seldom noticed by either the girl or her friends; yet upon close examination the following difference in the two sides of the body will be observed. The level of the two shoulders will be found to be different, the left being lower than the right, though but slightly so; the scapula on the left side will be flatter, while the right is not only generally more raised and prominent, but is more so at one point than another, viz. its inferior angle; this part of the bone projects more than natural, depending, I believe, upon the whole scapula being raised so much, that its lower angle is removed from the embrace of the portion of the latissimus dorsi muscle, which ought to pass over it. This portion of the muscle, then, loses its hold upon the bone, and its lower end tilts upwards and backwards from the thorax.

[Admitting that stays are sometimes the cause of curvature, Mr. Lonsdale explains the circumstance of the curvature being so frequently on the right side as follows:]

The constriction produced by the pressure of tight stays must act more on the side where there is the less resistance, and this, as already stated, is the left; the consequence of which is, that the ribs of this side will become more compressed, and the capacity of the lung be also diminished.

[In illustration of the effect of the absence of support on the side of the spine on which the ribs are compressed, the author proceeds:]

Any long-continued position of the body, which places the spine under circumstances to bring the weight of the arms and head to bear more on one side than the other, will throw it out of its normal erect line, causing an unequal strain upon the ligaments, at the same time that the muscles of the back are but little brought into action; there is nothing, then, to oppose the mechanical weight acting unfavourably on the vertebral column, and the spine begins to yield laterally, at first only in a slight degree, but by long continuance soon increases to an extent that the weight of the head and shoulders, even by themselves, in the erect position, is sufficient to cause the curve to become more and more decided, though the girl may no longer be placed under the unfavourable circumstances of pressure from stays, or of remaining in the awkward position which at first caused the curvature to commence. The mischief has been done by the normal straight line of the spinal column having been destroyed.

It is position only which primarily throws the vertebral column out of the erect line, and it may be stated that any position *where the right arm is used more than the left*, the equipoising of the vertebral column being lost, will throw the spine to the right side, and will be sufficient, by long continuance, to lay the foundation for the lateral curvature.

There is a natural or an acquired disposition to use the right side of the body more than the left; I would almost say it is a natural one. Most people are what is called "right handed." All the muscles are more developed, and possess greater power on the right than on the left side of the body, more particularly those of the upper extremities. This is less marked in females than in males, for the simple reason that they are less employed in physical exercises or occupations which tend to increase the muscular development; but still, though less marked, this difference will be found to exist, both in the more frequent use of the right arm, as well as in its greater size.

ART. 60.—*Caries of the Superior Cervical Vertebrae, with Destruction of the Body of the Axis.—Syphilitic Rheumatism.*

(From the Proceedings of the Pathological Society of Dublin. *The Dublin Quarterly Journal*, August 1847, p. 232.)

Dr. Lees presented a recent specimen of disease of the upper cervical vertebrae, taken from the body of a man, æt. 35, admitted into the Meath Hospital on the 5th of March, 1845, with pains in all his bones, or, as he described it, "all over him." He stated that, eight months previously to his admission, he had been salivated by mercury for a venereal complaint; that soon afterwards he had accidentally fallen into a river, and that the pains from which he was now suffering had set in three months subsequently. He was not emaciated, the disease was considered to be syphilitic rheumatism, and he was directed to be treated with sarsaparilla and iodide of potassium. On the 8th he was observed to be very restless; his pulse was very quick, his respiration a little hurried, and he complained much of the pains in his chest, abdomen, and legs. On examination of the abdomen, Dr. Lees now discovered a tumour in the hepatic region, with tenderness to deep pressure applied in that situation, and which, he thought, was probably indicative of a subacute supervening on a chronic hepatitis. On the 9th the patient was much worse; in addition to his former symptoms, he had now paralysis of the lower extremities, and complete retention of urine. The urine, when drawn off, was very turbid, loaded with the lithates, and had an acid reaction. The patient on sitting up, supported his head with both hands; and he now mentioned that during the previous night he had a sensation of something giving way, or cracking, in his neck, and he felt pain in the place to which he referred this sensation. The back of the neck being carefully explored, a hard tumour, painful on pressure, was detected at the upper cervical vertebrae, close to the occipital articulation. In the pharynx no ulceration could be discovered, but only a patch of green mucus



on it. A consultation was held with Messrs. Porter and Smyly, who agreed that the case was one of caries of the cervical vertebræ. There was no paralytic affection of the upper extremities. On the night of Thursday, the 13th instant, the patient vomited, after which he again lay down in bed; and in the morning, at six o'clock, it was found that he had died quietly during the night.

A complete *post-mortem* examination could not be made, as the friends of the deceased insisted on removing the body a few hours after death on the same morning, but the cervical vertebræ were examined, and the parts obtained which Dr. Lees now produced. The second vertebra was enlarged, and this had caused the prominence felt at the back of the neck. Mr. Ledwick, who made the examination, observed that the periosteum, on its spinous process, was thickened, and very vascular. The odontoid process still preserved its natural relation to the atlas, but the body of the axis itself had disappeared, its right articulating process alone being visible anteriorly, and a mass of grumous matter occupying the situation of the bone which had been destroyed. On laying open the vertebral canal, the dura mater of the theca vertebralis was observed to be very vascular, as was also the pia mater of the medulla spinalis itself; the redness, in both cases, was shown to be persistent after washing. These appearances Dr. Lees demonstrated on the posterior aspect, and he then proceeded to point out the condition of the medulla spinalis: it appeared in this place to be softened in some degree, as compared with the lower portion of its course in the cervical region, but there was no trace of any pressure having been made on it. Dr. Lees having also pointed out the remarkable lesion already described on the anterior aspect of the vertebræ, remarked that this destruction of the bone could not be very recent, yet the patient had been walking about up to his admission into the hospital, only nine days before his death; he had, indeed, mentioned that, a month previously to his admission, a similar tumour had formed at the back of his neck, and that matter had been discharged from it, but no trace of this could be discovered, nor was there any cicatrix in that situation. It was to be regretted that, from the hurried manner of the examination, there was no opportunity of inspecting the condition of the brain.

Dr. Lees was of opinion that the immediate cause of death in this case was the displacement of the vertebræ in some sudden motion of the patient. He directed attention to the remarkable circumstance of there having been no paralysis of the upper extremities, while there was, on the contrary, complete paraplegia, with retention of urine, neither of which is usually referred to a lesion of the medulla spinalis in the cervical region. Sir B. Brodie, in a lecture at St. George's Hospital last year (1844), has referred to a paper by Dr. Baillie, in the "Transactions of the Royal College of Physicians, London," in which that eminent pathologist connects paraplegia with cerebral disease. Paraplegia has been often observed to be accompanied by cerebral symptoms. The late Dr. A. Colles (in his "Practical Observations on the Venereal Disease," p. 139) has given the case of a gentleman labouring under secondary syphilis, with an ulcer at the back of the pharynx, who coughed up a piece of bone, which "on examination proved to be a ring of the first vertebra, with on one side the half, and on the other one-third of the articulating processes," which had become carious, and was discharged through the ulcer, yet he recovered, and survived six years, during which he married and had children. On the authority of that case, we may therefore conclude that this lesion is not so absolutely incurable, so necessarily fatal as *a priori* might be supposed.

ART. 61.—*Case of Vertical or De Champ Dislocation of the Patella, with Observations.*  
By M. PAYEN, M. D.

(From a Report by A. Markwick, Esq. *The Medical Times*, July 24th, 1847, p. 431.)

This species of displacement, which was first described by Moscati, illustrated by two cases by Monteggi, called in question by Manne and Lévielle, considered impossible by Boyer, and which has been passed over in silence by Delpach, A. Cooper, Samuel Cooper, and Chiellus, has been investigated by M. Malgaigne, in an excellent memoir, "Sur la Détermination des Diverses Espèces de Luxations de la Rotule." M. Malgaigne mentions only eleven cases of *de champ* luxation, and gives the detail of eight. Since the publication of this Essay two other cases

have been met with—one at New York, by Mr. Watson, and the other at Pittsburg, by M. Guzan.

Owing to its rarity the recital of another case may be interesting: M. D., a strong robust man, about 50 years of age, was walking on the snow on the 15th of last December, when his right foot slipped backwards, thereby giving to the body a rapid rotatory movement in the same direction. Being on the point of falling, M. D. seized the railings that were within his reach, and thus immediately arrested, for the upper part of the body, the impulsion, which expended itself on the lower extremities. The violent torsion he thus experienced occasioned him very acute pain in the right knee. It is quite certain that M. D. neither fell nor struck himself, as there were no marks upon the snow, and his clothes were not soiled. Persons came to his assistance, and supported him when he made a few steps to enter his house.

I was immediately sent for, and on my arrival found the leg slightly flexed upon the thigh, the knee extremely painful, and strangely deformed. The patella was placed edgewise, in front of the condyles of the femur, so that its external border from having become anterior, raised the skin; its cutaneous surface was directed inwards and *rather backwards*, and its articular surface outwards and *rather forwards*, while its internal edge rested firmly on the anterior part of the extremity of the femur, a little external to the middle line; the muscles of the thigh were powerfully contracted; the slightest movement was impossible, and every effort caused very great pain.

The patient having been placed in bed, with the limb resting on a mattress, I attempted to push the patella backwards by pressing the internal border from without inwards with my thumbs, whilst with the fingers I brought the external border from within outwards, but without success. I then flexed the thigh upon the pelvis, the leg being extended, as recommended by Valentine, and again tried, but with no better result. I then had recourse to the very rational method deduced by M. Malgaigne, from his researches, and which M. Coze had previously successfully employed in a case of *de champ* dislocation, viz. to forced flexion of the leg. But the first attempts occasioned such violent pain, and the contraction of the muscles of the thigh was so energetic, that I considered this mode as impracticable, and that I ought to abandon it, convinced from the reasons given by M. Malgaigne, that the difficulty of reduction in this case was owing to the angle of the patella being wedged in what he calls the *subcondylloid space*; and being unable to dislodge it by flexing the limb, I imagined that I might arrive at the same result by the opposite proceeding, that is, by causing the patella to ascend. To effect this, the limb being extended on the bed, I ordered the patient to raise his leg as much as possible, my fingers being at the same time so placed as to cause the patella to turn over. The patient obeyed, and made a sudden and violent effort: the patella yielded, and became somewhat raised, and then, with the combined assistance of my fingers, immediately reduced to its proper position. The knee immediately regained its shape, and was scarcely at all painful. The patient was ordered to keep in bed. During the first day the articulation was surrounded with compresses dipped in cold water. On the following day a swelling made its appearance on the inside of the knee, which gave the sensation of fluctuation. There was, however, no ecchymosis. On the seventh day the knee was restored to its ordinary size, and but little pain was felt on moving the patella from side to side. I surrounded the knee and the adjoining parts of the thigh and leg with a dextrined bandage, and the next day the patient was able to walk about on crutches.

On the twenty-sixth day I removed the bandage, and replaced it by a laced knee-cap. The patient was ordered to keep his room for a few days longer, and six weeks after the accident M. D. went out on foot with merely the aid of a stick. He is now quite recovered.

A few observations relative to this case may not be out of place.

1st. At the time when M. Malgaigne published his Essay, and from the facts which he had collected, we were justified in stating that the internal *de champ* luxations were more common than the external. The two cases of MM. Watson and Guzan, however, restored the equilibrium. Now, the one above related places the majority on the other side, that is, in favour of the external dislocations.

2d. Of the known cases of *de champ* luxation, those produced by mere muscular contraction are much more rare, since only two of the ten cases I have just related, one external and the other internal, are of this description. The one I have mentioned was external; and it seems rational to admit that the greatest number of dislocations of the patella, caused by muscular action alone, ought to take place in this direction, for it is to this side that the triceps tends to draw the bone, and we know that it is on this same side that what are called spontaneous luxations are always observed.

3d. The above case fully confirms M. Malgaigne's ideas as to the cause of the difficulty of the reduction, and it is evident that the proceeding adopted could succeed only by disengaging the angle of the patella from the subcondyloid space. As regards the mode of reduction, our case is very analogous to that of Monteggia (M. Malgaigne's sixteenth observation), in which the patella became spontaneously reduced during the efforts made by the patient in walking. In both cases the bone was dislodged from its wedged position by the same mechanism; we may therefore reasonably establish the precept, viz. to assist the reduction by making the patient stand up, or even by making him walk.

4th. As regards the facility of the reduction, our case holds an intermediate position between the extreme cases; and we may mention that, of the eight recorded by M. Malgaigne, the difficulty was so great in four, that in one, division of the muscles and of the ligamentum patellæ was resorted to without success; in two others the elevation was obliged to be employed; and that, in a fourth, the reduction was impossible. We may also add that, in the case of M. Guzman, the bone was not reduced till after the ligamentum patella had been divided, yet this division did not apparently facilitate the reduction.

5th. It has been said that the greater or less facility in the reduction depends on the cause of the displacement, and that the luxations of the patella produced by muscular contraction are more easy to reduce than others. May not this depend on the action of the muscles alone, not being, generally speaking, sufficient unless there is some anatomical disposition to favour the displacement; and which, consequently, facilitates the inverse route which the bone has to pass through in order to become reduced? Still I may remark that, in one case where M. Cournat was obliged to employ the elevator, the dislocation was occasioned by muscular contraction. However, notwithstanding that M. Malgaigne's opinion, as to the partial and spasmodic contractions of the triceps femoris being a cause of the luxation of the patella, is contested, I, nevertheless, entirely coincide with it; indeed it appears to me to be corroborated by the case we have related, for we cannot comprehend how there can be complete harmony of contraction in the inordinate and discordant movements above described. These isolated contractions of the muscular fibres appear to me incontestable; it is stated, in all our treatises on anatomy, that when the arm is raised, the anterior position of the deltoid contributes to carry it forwards, and the posterior portion backwards; the same, in fact, with numerous other muscles. We, therefore, see no difficulty in acknowledging the preponderating contraction of one portion of the triceps femoris as a cause of certain dislocations of the patella; and M. Malgaigne has very truly affirmed that the simultaneous action of all the muscles of a joint tend to consolidate and not to modify its relations.

6th. It has been stated that there may be some difficulty in ascertaining whether the *de champ* luxation is external or internal; in the above case no doubt could possibly exist; and the patella, evidently placed outside the middle line, pointed out very clearly the direction of the displacement. I am not aware that it is the same in every case, still the examination of the surfaces of the patella ought to be an indication, as it proved to be in our patient.

7th. As to the information said to be furnished by the extensor tendon and the ligamentum patella, the internal border of which, being more tense, indicating an internal luxation, and *vice versa*, we have endeavoured in vain to appreciate its value; the ligamentum patella, when forcibly stretched, did not present any distinct or appreciable border.

8th. Lastly, in the details I have given, I have mentioned that the surfaces of the patella had become placed not merely laterally, but that the posterior was external, and, at the same time, rather anterior; and the anterior internal, and a little



*posterior*. This disposition was sufficiently marked for me not to hesitate to admit the possibility of the *upside-down* luxation; and I am convinced that if M. D. had fallen on the knee after the displacement of the patella, this dislocation, in a more or less complete form, would have been the result.

[In South's "Notes to Chelius" it is briefly remarked that Coze's observations of a dislocation of the knee-cap, in which it was half twisted round itself, has been denied; and that Wolf has noticed a complete twisting round of the knee-cap. Vol. i. p. 805.]

### SECT. III.—TREATMENT OF SURGICAL DISEASES.

ART. 62.—*Cases Illustrating the Use of Ether in Surgical Operations.* By Dr. SNOW.

(On the Inhalation of the Vapours of Ether, 1847.)

1. *Operation for the Relief of Stricture in the Urethra, with Fistulous Openings, performed by Mr. LISTON.*—A gentleman, aged 49, whose health was much impaired by long illness and residence in the East Indies, had suffered for several years from stricture of the urethra, with fistulous openings in it. No catheter could be introduced, and none of his urine passed the natural way. On April 24, Mr. Liston performed an operation for his relief, which consisted in cutting into the urethra in the perineum. Mr. Thomas Morton, Mr. Emanuel Baker, the usual medical attendant of the patient, and Mr. Cadge were present. The patient having been bandaged as for lithotomy, began to inhale ether. He breathed steadily and pretty deeply, and became insensible without any excitement or struggling. In four minutes the eyes were turned rather upwards, and there was slight snoring. The operation was now commenced, and caused no sign of pain. It was concluded in seven minutes, during which he inhaled, at intervals, vapour more diluted than at first. Two or three minutes after the conclusion of the operation, he said a few words incoherently like a drunken man, but was not spoken to, and became silent again. Five minutes afterwards he spoke rationally, saying that he did not begin to feel any stupefying effects from the ether yet. The pulse was but little influenced throughout. After having been put into bed it was found that there was hemorrhage, and it became necessary to take up a small artery. He could not be got to lie still enough for it to be seized, so the ether was given again twenty minutes after he had recovered his consciousness; and for thirty-six minutes he was quite insensible, the eyes being turned up, and the respiration rather snoring; he was lifted up and some cushions placed under him, and he inhaled a little more vapour, and then the artery was secured as he lay quite motionless, and he recovered his consciousness a minute or two afterwards;  $\text{xxiv}$  of ether were consumed on the first occasion, and  $\text{xxv}$  on the second. The temperature of the water-bath was  $67^{\circ}$ ; somewhat higher than Mr. Liston now employs.

Being situated at the patient's head I did not see the operation, and consequently could take no notice of it. It was successful in establishing the natural channel for the urine, and the fistulous openings gradually closed up. The patient had spectral illusions occasionally for a week or two after the operation, but was not alarmed by them, and did not mistake them for realities. He fancied they were caused by the ether; but they most likely depended on his weakly condition, for a time increased by the loss of blood during the operation. I have not heard of anything of the kind after ether in any other case.

2. *Lithotomy.*—Mr. Tatum performed lithotomy on Henry Hemson, aged 10 years, in good general health. In between two and three minutes after he began to inhale he was perfectly insensible, the eyelids drooping, and the eyes being rather turned up. The staff was introduced without sign of pain, and he was moved to the bottom of the bed, the ether in the mean time having been left off. He inhaled again for about half a minute before the operation began; for he had begun to show signs of sensibility by opening his eyes. The operation was performed without the least sign of pain. I could not see the steps of it, but it was concluded in about two minutes by the extraction of a mulberry calculus,

about the size of a kidney bean. He seemed in the third degree during the operation, and not quite so deeply etherized as on the introduction of the staff. He looked about him directly the operation was concluded, and began to sing a school lesson. His face was florid all the time of the inhalation. Mr. Tatum informed me that the bladder had a tendency to contract and empty itself by the side of the staff at the beginning of the operation; this would probably have been prevented by his being etherized a degree further, viz. to the fourth. The little boy quickly recovered.

3. *Operation for Sinuses by the side of the Rectum; illustrating the smallest amount of etherization with which an operation can be satisfactorily performed.*—Mr. Keate, assisted by Mr. H. C. Johnson, operated on Sir — for two sinuses by the side of the rectum. The patient was rather nervous about the ether, but when he had commenced, inhaled very well. In two minutes the eyes were turned quite up, the lids, however, being kept closed, and they were briskly closed again directly they were lifted up. The face-piece being removed for a moment, the features were observed to be unaltered in expression. At this moment the expiratory valve was opened a little, to dilute the vapour farther, the water in the bath being 64°, and, consequently, the patient having been breathing equal parts of air and vapour. At the end of another minute, the third from the commencement of the inhalation, there was no farther alteration in the patient, except, perhaps, that the eyelids did not close so briskly on being lifted with the finger; but I observed that Mr. Keate had got a probe introduced into one of the sinuses unknown to me, and with this proof of the patient's insensibility I requested that the operation might be performed, although otherwise I should have thought the patient scarcely ready for it. During the division of the first sinus the patient held his breath, moved one hand a little, and stretched out his fingers; and during the division of the second sinus he also moved one foot a little, but not so as to interfere in any way with the operation; and he did not move his body, or utter the least sound. The inhalation was discontinued just as the operation was concluded; and half a minute afterwards, as Mr. Keate was thrusting a pledget of lint into the wound, the patient flinched and uttered an angry expression, and directly afterwards he tried to raise himself up from the sofa, but was easily prevented. In less than a minute he said that he had been in Lancashire disputing with some people; and on Mr. Keate informing him that the operation was concluded, he expressed his surprise and satisfaction, and seemed to have recovered his faculties completely, having been unconscious only three or four minutes altogether. The pulse was counted between the operation and the introduction of the lint, and it was at the rate of 88 in the minute. 3viiss of ether were expended.

The attitude and respiration of this patient, and the slight movement of his limbs during the operation, were precisely the same as those of a person suppressing the usual indications of pain, and I have noticed the same thing in some other cases. The dream about the conversation probably occurred at the moment when he first spoke.—Vide Report on Surgery.

ART. 63 — *Reduction of a Dislocation of the Femur, on the Dorsum of the Ilium, under the influence of Ether.* By JOHN CAUNT, Esq., Surgeon, Nottingham.

(*London Medical Gazette*, June 4th, 1847, p. 1010.)

The following case still further illustrates the astonishing effects of ether in the reduction of dislocations.

May 31st.—I was sent for late last night to Mr. D., a muscular man, 44 years of age, who, in returning from the country, was thrown from his gig, his horse stumbling when going at rather a rapid pace, and pitched upon the right shoulder, the coat being very much torn at that part. I immediately undressed him, and on examination found the shoulder on which he had fallen slightly hurt—merely bruised; but, strange to say, there was dislocation of the thigh-bone of the opposite side, upon the dorsum of the ilium. All his pain was referred to that hip, and he was constantly crying out about it, and could scarcely bear to be touched. There were also the symptoms of the above dislocation: such as shortening of the limb, inability to abduct it, and inversion of the knee. the foot turned inwards, and the head of the thigh-bone could be distinctly felt and slightly rotated upon the dorsum

illi. My friend, Mr. Simpson, kindly sent his ether apparatus, and undertook the control of it during the reduction. Dr. Hutchinson and Mr. Taylor were also present, and assisted.

The patient having been fixed in the usual position, the inhalation was commenced, and the action of the apparatus (the power it possesses of giving or modifying the vapour at will) was well illustrated. He soon exhibited symptoms of its effects, which at first were strong spasmodic action of the muscles of the extremities, particularly the upper. This condition soon subsided, and was immediately followed by complete relaxation and insensibility to pain: the pulse being soft and feeble. The extension by pulleys had only been used a very short time when the head of the bone disappeared from the position it had assumed, and the reduction of the dislocation was found to have been effected, almost to the surprise of every one present, and particularly the patient, who is a sensible man, and afterwards expressed his extreme delight at the means used.

ART. 64.—*Dislocation of the Humerus, of Five Weeks' Standing, reduced by means of Dr. Jarvis's Surgical Adjuster.\** Reported by ROBERT STONE, M. D., from the practice of Professor MAY, Washington:

(*Boston Med. and Surg. Journal*, Dec. 30th, 1846, p. 454.)

William Boothman, æt. 36, an Englishman, of exceedingly robust and muscular frame, presented himself to-day, on account of a dislocation of the humerus, the origin of which he thus describes: about six weeks since he suddenly ceased his unfortunate habits of intemperance, and in consequence had a slight attack of delirium tremens. Whilst in this condition and crossing a street he fell, striking the back of his right shoulder against the curbstone. He was not aware that any dislocation had taken place, but supposed that the pain, great tumefaction, and discoloration, which extended to the wrist, were merely the results of a violent bruise. It was but a few days before presenting himself, and after the tumefaction had subsided, that he observed the permanent immobility of the arm, and the deep depression under the acromion. Examination detected a dislocation downwards and forwards, with the head of the bone resting under the edge of the pectoralis minor, the elbow thrown backwards, and very slight mobility in its new position. Much numbness of the arm had existed since the accident, on account of pressure on the axillary plexus, and was still a subject of complaint. It would be proper to remark that the right clavicle had been fractured in his youth, and its bad coaptation produced deviation backwards and slightly upwards of the acromion. Careful examination satisfied Professor May that although the head of the bone was but slightly movable, no danger was to be apprehended from any complication of the axillary artery.

Although previously preferring and exceedingly successful with the pulleys, Professor May acceded to my wish to apply the apparatus of Dr. Jarvis in a case so capable of attesting its powers. Its application was preceded by v. s.  $\frac{3}{4}$  xviii, and an ineffectual attempt to nauseate with tart. antim. and ipecac. Traction for a few minutes, in connection with the rotation so fully permitted by the adjuster, seemed greatly to increase the mobility of the head of the bone, and the ratchet bar was left in this position for some time, in order to weary the muscles, and act gently upon the adhesions. This alternate extension and rest was continued at proper intervals, when, just before the moment at which reduction would have been perfectly practicable, the extending bands, which had not been previously well examined, all gave way, leaving only the gain of greater mobility at the head of the bone. As it was impossible to remedy the accident at that moment, Professor May applied the sheets, &c., in the ordinary method, assisted by Professors Miller, Johnston, and others; but without success. Recourse was next had to the pulleys, which, being gently and steadily applied for a long time, until the man's endurance was exhausted, were also laid aside.

On questioning the patient as to the relative suffering endured during the three processes, he declared that the action of the adjuster was by far the least painful,

\* The apparatus is described in Volume III. of the Half-yearly Abstract, p. 235.



and at the moment of snapping the extending bands he "felt the bone at its socket, and that it slipped away."

Nov. 23d.—V. s.  $\frac{5}{8}$ xx tart. antim. and ipecac. with much better effect; the man for the first time acknowledged nausea. Having procured stout cords, we proceeded to the reduction with Jarvis's adjuster. The axilla was filled with a mass of cotton as usual, and the pad of the fork placed thereon. It may be worthy of remark, that on this occasion the perineal was substituted for the axillary tork, on account of the man's great depth of thorax, as it was observed that on bringing the elbow forward, on Saturday, its end impinged upon the sternum, causing excessive pain. The arm being flexed at the elbow, the extending cords were made fast, and extension commenced. At this stage of the operation the vast superiority of Dr. Jarvis's instrument was manifested; for whilst extension was made precisely in the axis of dislocation, Dr. May, with one hand in the axilla and the other grasping the forearm, had the most perfect command of the limb, and could produce rotation at his pleasure. When satisfied that the head of the bone had been brought low enough in the axilla, and sufficient mobility existed, a broad band was passed under the neck of the humerus, and tied over the shoulders of the operator. The forearm was then resigned, and, with both hands, he grasped the bone in the axilla, at the same time throwing back his body, so that the head of the humerus was forcibly lifted upwards and outwards. Whilst this manœuvre was performed, the elbow was rapidly thrown forwards at "the word," and hard up against the ribs, and the extending bands instantly relaxed. As a matter of course, the bone entered the glenoid cavity precisely in the same manner as it left it.

Although this case had resisted the best efforts with the sheets and pulleys, the reduction was effected in less than thirty minutes with the adjuster. Of course a very slight depression remained after the reduction, on account of the wasting of the deltoid, &c.; but when a pad was placed in the axilla, and Desault's apparatus applied, the roundness of the shoulder was restored, making but a slight deduction for the deformity from the old fracture of the clavicle. This result is a source of gratification to the operator and those surgeons who witnessed it, as it proved conclusively the great power of the instrument, and that the manœuvre could not have been thus performed with the aid of any other. I should remark that the method of commanding the head of the bone by Professor May, in connection with the instrument, was novel to myself, although I had the pleasure, a year ago, of seeing Dr. Jarvis apply the adjuster in a similar case at the military hospital of Val de Grâce, at Paris.

In the application of this instrument the proper rule for traction seems to be to draw down until the patient feels it severely, and then to rest a few moments and rotate, waiting until the muscles are so wearied as to enable us, when extension is resumed, to make great progress at a moment when they are unable to resist. Extension and rest are thus to be alternated, until the operator is satisfied that the head of the bone is brought down parallel with the plane of the glenoid. In this case there was no deviation in extension from the axis of dislocation, and the head was made to retrace its path precisely; then, by lifting it forcibly, whilst at the time of relaxing the extension the elbow was brought forwards and close to the thorax, the bone was set free in a line outside of the glenoid cavity. When thus set free the muscles were made available, and even the triceps and pectoralis assisted in the reduction.

The patient is now perfectly well, only carrying his arm in a sling as a precautionary measure.

ART. 65.—*Removal of the Superior Maxilla for a Tumour of the Antrum—Apparent Cure—Return of the Disease—Second Operation—Sequel.*

By J. MARION SIMS, M. D.

(Condensed from the *American Quarterly Journal*, April, 1847, p. 310.)

The subject was a negro boy, George, aged 18. The disease first manifested itself some time in the spring of 1844, and was supposed to be merely an excrescence from the gum, which was several times removed and cauterized; being always reproduced very soon afterwards. In five or six months the cheek began

to bulge. I saw the case early in January, 1845. The tumour appeared to be as large as a good-sized orange, occupying the entire extent of the left upper jaw, and involving, to some degree, the malar bone. The mouth was in a bad condition; the gums purple, tumid, and bleeding on the slightest touch; the teeth decayed, with the fangs here and there exposed, while, at other points, they were firmly ankylosed with their alveoli. The free scarification of the gums, the extraction of the decayed molars, and attention to his general health soon had him in a proper condition for an operation, which was performed on the 22d of January, 1845.

The cheek was opened by the curvilinear incision, taking particular pains to avoid the parotid duct. The facial artery being secured, the anterior flap was dissected up to the edge of the orbit. The ala nasi and frænum of the lip were cut up to permit the more easy elevation of the flap. The origin of the inferior oblique was divided, and the contents of the socket separated from the orbital plates of the maxillary and malar bones. The zygomatic face of the maxilla was freed by a downward dissection of the lower flap.

The left lateral incisor being extracted, an incision was made through the mucous membrane, near to and parallel with the longitudinal palatine suture. Two or three nips of Liston's bone forceps easily divided the alveolar and palatine processes. The eye and its appendages were then supported by the handle of a light silver spoon bent at right angles, while the nasal process was divided obliquely downwards so as to avoid injuring the nasal duct. The broad part of the malar bone was next divided into the speno-maxillary fissure, which was more easy than the section of the nasal process, simply because it was more accessible. The separation of the palate plate from the palate process of the maxilla was effected by a thrust with a strong pointed bone knife.

The only remaining bony attachment, being that with the pterygoid process of the sphenoid bone, was separated by another thrust with the knife laterally.

The diseased mass being now movable was started slightly downwards, thus exposing to view the second branch of the fifth pair of nerves, just as it enters the infra-orbital canal, when it was easily divided, producing excessive but momentary pain.

The operation was now quickly completed by clipping the remaining attachments with the scissors.

The bottom of the wound presented a smooth concavity, fitting accurately the ovoid appearance of the tumour, thus showing that not a vestige of the disease was left behind.

The hemorrhage did not amount to more than eight or ten ounces. No ligature was applied save to the facial artery, and that was removed before the wound was dressed. The boy bore the operation (which lasted thirty-five minutes) with wonderful fortitude. During its performance he was allowed brandy-and-water as occasion seemed to require. At its completion he was permitted to lie down. After waiting half an hour, and compressing a single bleeding vessel, the posterior palatine artery, the wound was closed by the interrupted suture and adhesive plaster. There was no stuffing of the cavity, and no other dressing.

On the ninth day he walked out in the streets perfectly well.

His rapid recovery from an operation of such magnitude was a matter of astonishment to all who observed it. In a short time the cavity was filled up, all to two small openings about the size of a goose quill; the one leading up to the orbit, the other into the nostril. He kept these little passages stuffed with small pledgets of cotton, which, for cleanliness, were renewed after each meal. He left on the 1st of March, in excellent health and spirits, *apparently* cured, with no deformity but that from the cicatrix, and a slight twisting of the face to the right side when he laughed. The tumour was as large as a medium-sized orange, having rather a *tense elastic* feel. The only portions of bone visible were the alveoli of the lateral incisor and cuspidatus, with the tooth attached, a bit of the palatine and nasal processes, and a part of the malar bone. The orbital plates were entirely destroyed by pressure, so were the inferior spongy bones. The orbital edge of the maxilla was transformed into a sort of *spiculated* osteo-fibrous structure.

The proper substance of the tumour is osseous and scirrhus, and might be

termed an osteo-scirrhoma. The central portions are filled with *stellations* of bony matter sending off spangled radiations towards the circumference of the scirrhous mass.

I sincerely wish that the history of the case could end here, but the whole truth must be told.

He began to complain of pain in the cheek early in May. He had so much pain in and about the eye as to require, particularly at night, large doses of morphine. The growth of the tumour was remarkably rapid, so much so as to be perceptible from day to day. From its reappearance about the 1st of May, it had, in three weeks' time, got to be a great deal larger than the first tumour. The left eye was bulged out of its socket, deeply injected and lachrymose, vision greatly impaired, with very little power of moving the eye, and none of closing the lids. The skin of the cheek was thinned, reddened, and seemed to be in danger of ulcerating, simply by the mechanical pressure exerted by the rapid development of the morbid mass, which was greatly enlarged, not only here, but in every other direction. The cicatrix left by the first operation had become elevated, broad, hard, and painful, having very much the appearance of the dermoid tumour termed *kelloides*.

His condition was looked upon now as being perfectly helpless and hopeless, but he begged for a repetition of the operation, which was accordingly performed on the 24th of May, (about four months after the first.)

It is unnecessary to give the details of the operation, as I simply followed the tumour, separating its attachments on every side, for it was reproduced from every portion of the cavity made by the removal of the first tumour. It was the most tedious and painful operation I have ever witnessed; but the most difficult and perplexing part of it was the dissection of the mass from its attachments at the back of the socket, and as it were from the very base of the brain. The tumour was pushed downwards by an assistant, while the dissection under the eye was conducted slowly and cautiously, now with the scalpel and again with scissors, all the time cutting deeply in the dark, guided only by the forefinger of the left hand. During the greater part of the operation he evinced wonderful fortitude, but at the close his strength was almost exhausted; it lasted, I am sorry to say, *one hour and twenty-nine minutes*.

The hemorrhage was much more than at the preceding operation. A small artery at the bottom of the cavity was compressed for several minutes by the finger, and very soon the oozing of blood seemed to cease. I then introduced a piece of fine sponge (wet) just large enough to fill the cavity, and adjusted the flaps over it, securing them by the interrupted suture. Its presence was very injurious. It appeared to invite the flow of blood, and there was a gradual hemorrhage kept up for some time, till, in the course of two or three hours, his case presented altogether a very alarming aspect.

From the loss of blood during the operation, and from its gradual draining afterwards, as well as from the excessive shock to the nervous system, he passed into a perfect state of collapse. His pulse, at one time but 80 in a minute, instantly rising to 140, and even becoming extinguished on the slightest exertion; his respiration, 36 in a minute, suddenly amounting to 60, with great restlessness, burning heat of stomach, nausea and vomiting, sinking, excessive prostration, cold extremities, and cold clammy sweat, indicated but too plainly the imminent danger he was in of dying by the hands of the surgeon. I was exceedingly alarmed, cut loose the stitches, laid open the wound, removed the sponge saturated with blood, wiped out a few coagula, saw that there was a gradual oozing from the bottom and sides of the cavity, plugged it up with a bit of charpie wet in creosote water (twelve drops to the ounce of distilled water), watched it for a short time, and discovered that it had the happy effect of checking the hemorrhage. The flaps were readjusted and held merely by adhesive plaster. Brandy and carb. ammonia were administered very freely. He had a most uncomfortable night, the cold hands and feet, the nausea and occasional vomiting, the jactitation, internal heat and thirst, the thready frequent pulse, in short, all the symptoms of collapse continued unabated for nearly twenty-four hours, at the end of which time reaction was pretty well re-established, the pulse falling from 160 to 120 per minute.



As he was now considered safe, the gaping wound was closed by suture. He improved very fast, and his face was well in a week.

The tumour removed was nearly twice as large as the first, presenting the same peculiarities.

It was very soon discovered that the operation was fruitless, for the internal surface of the cavity showed evident symptoms of a reappearance of the disease at every point. As soon as he was sufficiently recovered he went home, saying that he intended to return for a third operation if it became necessary. The disease gradually increased, destroying entirely the vision of his left eye, filling up his mouth and throat so as to prevent deglutition, and he died (in four months) comatose, doubtless from the encroachments of the disease on the brain. He was emaciated to a mere skeleton simply from inanition.

*Remarks.* There can be but a common feeling of regret at the unfortunate issue of this case.

The first operation was justifiable, and every one was satisfied with it. The propriety of the second might possibly be questioned; but almost any one would have performed it when an apparently healthy young man was begging for it. I committed two errors in the last, which it may be of some practical importance to remember.

The *first* was in attempting to follow the tumour as though it had been perfectly encysted. Instead of separating it from the remaining portion of the malar bone, I ought to have removed the bone with it, by dividing the zygoma and the frontal process, which would have allowed me to get better at the mass. The operation would have been facilitated very materially, and, therefore, the pain and loss of blood would have been less.

The *next* mistake (and it was a horrid one) was stuffing the cavity with a bit of wet sponge. This substance absorbed the oozing blood, which, not coagulating, was conveyed to the most dependent part of the sponge, whence it fell into the throat, or ran from the mouth. If the sponge had been permitted to remain for two hours longer, it would certainly have killed him. I shall always regret that I did not tie the carotid, as was suggested to me by my friend, Dr. Ames. It would most assuredly have retarded the reproduction of the disease, and thus have prolonged life.

#### ART. 66.—*The Treatment of Partial Deafness.*

(Extracted from Dr. Allen Thomson's *Communication. Monthly Journal*, April 1847, p. 729.)

Sounds transmitted by contact of the sounding body directly to the head appear louder when the external meatus is closed. Thus, place a tuning-fork, while sounding, in contact with the middle of the top of the head, with the ears open, and it will be heard only faintly; then close the external ears, and the intensity of the sound will appear much greater, indeed almost doubled. If one ear only be closed, the intensity of the sound in the shut ear will appear so much greater, that the sound seems chiefly to be heard in that ear, and this to a remarkable degree; for even if the tuning-fork be applied to the head close to the open ear (provided it does not touch the external auricle), the sound will appear to travel over to the opposite ear, the meatus of which is closed. We can even trace, by our sensations, the way which the sound seems to take to gain the opposite side. When the tuning-fork, for example, is applied to any part of the skull, at a little distance from the open ear, the sound will appear to travel over the top of the head; but when applied close to the open ear, that is, towards the base of the skull, it seems as if the sensation of the vibration passed through the base to gain the opposite side.

Professor E. H. Weber, of Leipsic, to whom we owe an accurate description of this phenomenon, attributes the increase of sound to the resonance of the confined air of the meatus and tympanum, or to the vibrations established in this column of air, rendered a separate system in consequence of its enclosure.

In making similar experiments on persons deaf of one ear from affection of the tympanum or Eustachian tube the unexpected circumstance occurred, viz. that the sound of the tuning-fork applied to the head appeared, as in the experiments on

closing the meatus, much the loudest in the deaf ear. This may not occur in all, but in four out of five such persons in whom I have made the trial, the result was as I have now stated it: and it can scarcely be held that this greater intensity of sounds felt through the deaf ear was merely the effect of its being unusual.

In almost all those in whom I have tried the experiment, sounds of vibrating bodies applied to the hard parts of the head, like those vibrating in the external ear, appear louder the nearer the place at which the sounding body applied is to the seat of the hearing. This every one knows is the case with the ears open, and it may be ascertained with great ease when the ears are plugged, by the comparison of any sound of uniform intensity, such as the ticking of a watch, or sound of the tuning-fork applied at different parts of the head.

It seems surprising, considering how long it has been known that in some deaf persons the hearing of sounds is improved by promoting their transmission through the bones of the head, that an apparatus, calculated to facilitate this mode of communication of the sonorous vibrations, has not been employed in place of the ear-trumpet, which can be of comparatively little service to them. The experiments which I have made upon the partially deaf, lead me to divide them into two classes, according as their hearing is in the one set most perfect through the meatus or in the other through the bones of the head, a difference which may at once be ascertained by means of the tuning-fork. In those hearing best through the hard parts of the head, it has long been known that the air-passages, or accessory parts of the organ, principally are affected. In those partially deaf persons, on the other hand, who hear best by the meatus, it appears very probable, that in general an affection of the internal ear, or loss of sensibility of the auditory nerve, is the cause of deafness.

In these last the ear-trumpet is of essential service, by concentrating all the weaker vibrations in the passage which is to carry them to the nerve, whose sensations are deadened. In the former the meatus should be closed, and every means ought to be used, as by sounding-boards to collect, and solid elastic rods to conduct, the vibrations to the hard parts of the head.

ART. 67.—*Syphilis of the Bones—Excerptu from Dr. Porter's Lectures.*

(*Dublin Med. Press*, May 26th, 1847, p. 322.)

Swellings and pains of the bones and joints are to be ranked amongst the true and genuine symptoms of the venereal disease—they are of so frequent occurrence as to be almost universal—they exist amongst its most characteristic features, and by their nocturnal exacerbations often afford a most valuable diagnostic—and as such they have been mentioned by every writer that has described the disease with any degree of accuracy. They are generally late in making their appearance, but by no means necessarily so, for I have seen them in company with the eruptions and sore throat, and sometimes even preceding them, and what is of more importance, I have frequently met with them in patients who had not been subjected to any, even the slightest, mercurial treatment. They very rarely run into destructive ulceration and caries, unless as a consequence of some cruel mismanagement or some very unfortunate complication.

The venereal node, however acute it may be as to the suffering it occasions, is extremely chronic in its progress, and rarely advances to suppuration unless it is prematurely cut into by the surgeon, or the subject of it happens to be worn and broken down either by constitutional debility or injudicious treatment.

There is a striking analogy throughout all the symptoms and stages of the venereal disease; chancres are generally chronic, but we have seen them assume a phagedenic character from some peculiarity of constitution, some irregularity of conduct or injudicious treatment. Ulcers in the throat are generally chronic also, but may undergo similar changes from similar causes. The prevailing eruptions, the papular and the lichens, are mild and comparatively benignant, but occasionally we have the pustular and tubercular degenerating into foul phagedenic ulcers and rupial crusts; and so it is with the bones, the venereal affections of which, and of the periosteum, are usually indolent and almost harmless, but like the other symptoms may be roused into mischievous activity by some wretched condition

of the constitution, by improper management, or by being mixed up and complicated with mercurial irritation, with scrofula, or perhaps with both.

Nodes are at least of two kinds: one, consisting of a deposit of osseous material constituting a true exostosis; the other produced by a deposition of fluid between the periosteum and the bone. The first is (as far as I know) always a late symptom, and is by no means common.

The removal of this node is scarcely ever effected by the use of mercury, but the pain and inconvenience subside, and the small tumour remains hard, and no more sensible than any other part of the osseous tissues—at least such has been my experience of the few cases that have come under my observation; but to speak truly, I have not seen sufficient of this symptom to enable me to form positive or decisive opinions respecting it.

The periosteal node, as being more common, is far more important; it is usually a late symptom, but I have seen it at a very early period in company with some of the eruptions, and it is so far a truly syphilitic symptom, that few patients escape who have permitted the disease to progress without interruption, and fewer still who have merely endeavoured to arrest and delay its steps instead of wholly eradicating and expelling it. It is obviously occasioned by inflammation of the periosteum causing the effusion of a fluid sometimes semi-gelatinous, sometimes serous, and sometimes dark-coloured and sanious, between it and the bone, and thus it happens that small and thin bones, which derive their vascular nutriment chiefly or entirely from their investing membranes, on being deprived of them become carious, and perish with an almost inconceivable degree of rapidity, whilst in situations more favourably constituted, nodes may exist for a considerable time without producing any permanent deformity or future inconvenience. In this way we can comprehend why the bones of the nose endure the inroads of the disease so badly, and are often destroyed and lost in the course of a few days; whilst in other situations the calamity, if it happens at all, is delayed to a remoter period, and perhaps often is to be traced to injudicious interference. These nodes generally attack the bones which are most superficially situated and most slightly covered, and thus are met with on the front of the tibia, the outside of the fibula, the forehead, and other parts of the head, the clavicle, sternum, and ribs; occurring in the form of swellings as hard as if formed by the bone itself, not round nor circumscribed, but gradually subsiding to the level of the adjacent surface: not discoloured, exquisitely tender to the touch, and subject to nocturnal exacerbations of very great severity. After some time (and the interval seems to depend on the structure of the bone engaged) caries takes place, then external inflammation, an increase of swelling, softening of the tumour, fluctuation, and finally the establishment of an ulcer: this ulceration is usually small, although the discharge is profuse, but instead of presenting the small papillary elevation so characteristic of the sore that communicates with a diseased bone, it, like other venereal ulcers, seems to have an irresistible tendency to scab, and is generally partially covered with a dry and dirty crust.

The thin bones of the nose, deriving their support almost entirely from their membranes, soon perish when detached from them, and the organ may be endangered, if not lost, before the patient is fully aware of his perilous condition.

The earliest symptoms that attract attention resemble those of a common catarrh. The patient loses the power of distinguishing one smell from another, but feels within his own nostrils a constantly persisting fetid odour; his head (as he expresses it) is stuffed: the air passes with difficulty through his nose, and the clearness of his voice is impaired; very soon an abundant discharge appears, which is easily distinguished from the natural secretion of the organ by its abominable fetor; he blows scabs and crusts from the nostrils, particularly in the morning, as they seem to accumulate during the night, and he is very uncomfortable until they are discharged. As the disease proceeds pieces of bone come away, and if this happens to any considerable extent the nose falls down, and becomes permanently, and, in some instances, disgustingly deformed. This affection is termed an *ozæna*, and I believe never leaves a patient without some lasting and incurable inconvenience. At the present day we not unfrequently meet with a more modified form of disease of the nose, principally in persons who have undergone short, irregular, and imperfect courses of mercury, in which its progress



is slower and its ravages far less extensive. Thus the septum may be partially removed, and a communication established between the nostrils, or the palate may be perforated into the mouth, in either of which cases the voice will be more or less impaired, and the inconvenience of the opening between the mouth and nose can only be rendered tolerable by the adaptation of an artificial palate.

When nodes followed by caries appear on the head, they receive the whimsical name of *corona veneris*. In their characters and progress they do not differ from those situated elsewhere, and might not have required special notice except from the circumstance of their occasionally inducing most disastrous symptoms, and even death. The possibility of this occurrence will be easily explained by reflecting on the intimate vascular connection that exists between the pericranium and dura mater, and the frequency of disease being communicated from one of these structures to the other. When a patient dies thus, it is usually with symptoms of oppressed brain and coma, and dissections after death exhibit a separation of the dura mater from the bone, a thickening of the membrane, and frequently a deposition of sanies, or of green and fetid purulent matter underneath. In such cases the obvious mode of relief is by the application of the trephine without delay; not that even this affords a certain promise of recovery, for matter may have formed in different and distant situations, or the disease may continue to spread notwithstanding the removal of a portion of carious bone, and the evacuation of any subjacent fluid, but it offers a chance, the only chance, of escape from certain and pressing destruction.

Nodes on the sternum and ribs run into ulceration with the greatest rapidity, and the ulcers are most intractable; as far as I can judge from my own experience, they are soon cured. It had been remarked years ago that the spongoid texture of the sternum particularly disposed that bone to caries, and favored its extension when once attacked; and the same is true of the ribs, only in a more limited degree; these parts also cannot be kept in a state of perfect rest, and whether these causes may produce and maintain disease, or that it only breaks out in persons of bad and broken, and debilitated constitutions, certain it is that few affections are more intractable or more destructive. Add to this that the great majority, if not all, the cases I have ever seen afford more than presumptive evidence of disease in the lungs, and it will be easily conceived why the opinion I entertain of them is so exceedingly unfavourable. It was formerly proposed, and I believe, not unfrequently the practice, to trepan the sternum, or remove a portion of the rib, with a view of cutting away the carious and rotten bone; and according to the doctrines of the olden times, such removal was absolutely indispensable to the cicatrization and healing of the sore. I am not favourable to such practice; I have trephined the sternum twice for abscesses seated behind it, and in two or three instances have cut away portions of diseased ribs and their cartilages, but cannot say that the results were very encouraging. In a case of purely idiopathic caries, it is possible such an operation might appear to be of use, but in one arising from a syphilitic taint, or in anywise complicated with it, if medical treatment is unavailing, I believe little may be expected from manual interference.

But the great difficulty is the correct constitutional management of these affections; and I know of no subject in which it is more utterly impossible to lay down fixed and determinate principles.

Sometimes, but it must be confessed not frequently, these affections of the bones yield to the sanative influence of mercury as kindly and favourably as any other venereal symptom whatever. Sometimes they disappear for a time, but return after a short interval, perhaps in a more aggravated form—perhaps in a more dangerous locality; sometimes small doses of the medicine seem to benefit cases that had resisted every mode of treatment; and sometimes in every shape, and form, and quantity, it manifestly disagrees with the patient, enhancing his sufferings, and of course increasing his danger. Nothing can be more vacillating and uncertain—nothing more devoid of principle, or more empirical in practice, than the treatment of these affections—nothing more illustrative of the fatality that has at all times attended the venereal disease, rendering it equally the scourge of mankind and the opprobrium of medical science. Mercury, and bark, and sarsaparilla, and iodine, and nitric acid, and a host of other medicines, have all been employed, and each has won for itself some fleeting reputation.

I have already stated my opinion that affections of the bones occasionally appear as the pure and unmixed results of the venereal contamination; in fact, that they are as truly syphilitic as chancre, sore throat, or any of the eruptions, and would become developed at their proper time, and in their proper order, if the malady was allowed to run its own course unchecked and unaltered by any medicine. When detected they are curable by mercury, and by it alone, but the difficulty lies in the detection, for few cases are met with in which the history is so accurately detailed, or the symptoms so clearly marked as to enable the surgeon to prescribe his antidote with perfect confidence. When we find a node remaining unaltered for a considerable length of time, and the patient neither wan nor worn, weak, pallid, or emaciated, it appears to be a case in which mercury promises to be successful, and may be freely prescribed. Even when it is otherwise, and the system seems to have suffered to a considerable extent, if, either from the history of the case, or our own examination, we have reason to regard it as venereal, without admixture or complication, mercury may still be adventured on, with cautious attention to the rule of regulating the dose by the apparent strength of the patient.

But it is not with these truly venereal symptoms that the greatest difficulty and embarrassment are experienced; neither are the patients who suffer from them so often broken or debilitated as to render a trial of mercury in the first instance peculiarly hazardous; but when the disease is complicated with scrofula or other affection, the natural tendency of which is to corrupt and spoil the bones, and to which mercury in any shape, and almost in any quantity, is generally pernicious, it is no wonder that the combined malady should become unmanageable by any medicine, and refuse to yield to almost any treatment. Mercury is in these cases administered in but small quantities, if at all. In its stead the medicines are usually resorted to which have been found most beneficial in the diseases with which we suppose the venereal to be complicated. Thus we treat mercurial affections with sarsaparilla, the acids, bark, a change of temperature and of climate, and these are precisely the remedies which are found most serviceable in many of the so-called venereal diseases of the bones. In like manner, scrofulous affections are treated with iodine in its various preparations, particularly the hydriodate of potash; and this latter medicine has obtained for itself a reputation in syphilitic cases which I hope it may hereafter be able to maintain. Again, it is often found that the efficacy of one or other of these modes of treatment is greatly increased by the addition of small quantities of mercury, or by combining it with some of the preparations just alluded to; and thus, perhaps, we may be able to understand why the iodide of mercury is so frequently, as well as so successfully, employed in caries and in other syphilitic symptoms. But, after all, these are usually empirical attempts, and as such attended by the results that generally await such practice; at first undertaken with doubt and hesitation, and watched in their progress with anxious solicitude, some are found to prove successful, and afford encouragement for similar trials in apparently similar cases, whilst others are not only not benefited, but seem to be aggravated by almost any and every mode of treatment suggested.

If, however, the constitutional management of nodes is uncertain and undetermined, it is otherwise with the local: for these swellings should be left to run their own career, and scarcely ever interfered with; and I would have left this part of the subject without further observation, were it not that some respectable authorities have sanctioned a practice in many respects objectionable. Those who divide nodes into the hard and soft recommend that the latter should be cut into at once; yet I can scarcely conceive anything more detrimental than opening a venereal node, or anything that a surgeon will be more likely to regret. The practice was probably derived from observing the instantaneous relief experienced on the division of an idiopathic node down to the bone; but there is a vast difference between periostitis occurring in a patient whose constitution is otherwise sound and one whose system is poisoned by some specific taint. In the one case the patient has only simple or accidental inflammation to contend with, which may be combated by ordinary measures, and by no means necessarily involves a caries of the bones on its exposure to the air; in the other, there is a specific inflammation, that can only be removed by specific treatment, the effect of which, even when successful, is so slowly wrought that the exposed bone will assuredly run into caries before

the disease can be arrested. The unopened node is often removed by mercury, or other suitable treatment, even after it has become red and shown a tendency to soften and suppurate; but I never yet knew of a venereal node opened by a surgeon that a tedious, foul, and unhealthy ulcer was not the consequence, and if it happened to be situated on an important bone, the patient was most fortunate if he escaped even with these inconveniences. It is quite true that in the latter stages, when the tumour has suppurated, and the bone is rotten and spoiled beneath it, an incision can scarcely render matters worse, and will be right and proper if it relieves pain in the slightest degree; but at any period previous to that, a meddling interference with the knife is always unprofitable, and may be decidedly injurious.

ART. 68.—*Galvanism for the Decomposition of Urinary Calculi, and in Affections of the Bladder.* Extracted from Mr. DONOVAN's Essay on the Efficacy of Electricity, Galvanism, &c. in the Cure of Disease.

(*Dublin Quart. Journ.*, May 1847, p. 302.)

M. Orioli, "one of the most distinguished philosophers with whom Italy is honoured," says Becquerel, proposes to use galvanism in the interior of the bladder by means of a sound, vanished everywhere except at the point. The sound is made to communicate with one end of the pile, while the other end is put in connection with the reins. "Perhaps," says he, "a calculus may thus be decomposed." Dr. Harle, of Norwich, conceived the same idea.\*

M. Bourges des Mortiers dissolved a calculus, out of the body, weighing one gramme, perfectly, in twenty-four hours, by galvanism. But MM. Prévost and J. Dumas have gone far towards proving the possibility of successfully employing galvanism as a means of destroying a calculus in the bladder. A fusible human calculus, placed in water, was submitted to the action of 120 pairs of plates during twelve hours. The bases and the phosphoric acid were liberated at their respective poles, but, owing to the nature of the arrangement, they reunited in a fine powder. The weight in this period was reduced by twelve grains. Other trials were made during sixteen hours, and at the end of this time the calculus was reduced to a mass so friable that the slightest pressure reduced it to little crystalline grains, which could easily pass through the urethra.

MM. Prévost and Dumas conceive that it is almost always possible to introduce into the bladder two conductors, which shall be spread out at the extremity by means of a slight spring, so that they may touch the calculus by their internal surface, which, in this part, is deprived of its insulating envelope. The calculus would be thus decomposed without injury to the bladder, since the current takes the shortest distance between the two poles.

To prove that the galvanic process may take place in the bladder without injury, they introduced a properly prepared pair of conductors through the urethra of a dog into the bladder, and connected them with a pile of 135 pairs, acted on by nitro-sulphuric acid. They remarked with much satisfaction that the dog was not discoverably inconvenienced while the bladder was distended with injections of lukewarm water, yet this same apparatus was capable of decomposing water with great energy, and furnishing torrents of gas.

A fusible calculus was then fixed to a sound between the two platinum conductors, and the whole was introduced into the bladder of a large bitch; lukewarm water was injected, and the conductors were put in connection with all the troughs which composed their battery. After some slight movements the animal was quiet, and endured the galvanic action for an hour. The calculus, when withdrawn, showed unequivocal traces of decomposition. The same process was repeated morning and night for six days, but the calculus had now become too friable to permit further repetition, and had lost weight in the same ratio as the former one. The animal, after a few days' repose, was killed, when it was found that the bladder was in its natural state.

These experiments, it must be confessed, render it probable that this mode of removing calculi from the bladder may one day or other take the place of the two

\* *Ann. of Phil.* No. xxiv. p. 114.



operations at present in use, except when the calculus consists of uric acid, which is, unfortunately, too commonly the case. The editors of the "*Annales de Chimie*," subjoin to this paper an observation that nitrate of potash, dissolved in the water injected into the bladder, renders the decomposition of hard, compact phosphates as easy as that of the porous kinds. They also satisfied themselves that the bladder is not injured during the action of the pile; and they think that instruments may easily be contrived for determining the nature of the calculus on which it is proposed to operate.\*

The galvanic influence may with more certainty be made to act on the bladder itself than on anything contained in it; it exerts a decided efficacy in restoring the energy of that organ. The case of a lady under the care of Drs. Goodwin and Radford is described, who, after her accouchement, was unable to evacuate the contents of the bladder. All the usual remedies failed during a fortnight's trial: the catheter was employed two or three times a day, and could not be dispensed with. On Dr. Goodwin's suggestion, galvanism was tried, and the *first application proved successful*.†

#### ART. 69.—*On the Treatment of Abscesses by Seton.*

(*Dublin Med. Press*, May 3d, 1847, p. 274.)

Dr. Darby said he had recently treated some cases of abscess by seton, and as it was a mode of treatment not generally adopted, he wished to submit a short account of them to the Surgical Society.

In the summer of 1844 he was induced to try it in the case of a young woman who had an encysted abscess, of about an inch and a half in diameter, on the side of the neck, which she objected to have punctured, fearing an "unsightly mark" would remain, and requested he would "put it back." This he told her it was impossible to do, and advised her to let him pass a fine thread through it: to this she consented. With a curved needle he inserted a thread of spool cotton as a seton, through the entire diameter of the abscess, and applied water dressing over all to avoid inflammation. On the following day he found pus oozing beside the thread; and in this manner the contents slowly and continuously discharged, the cavity gradually contracted, and at the end of ten or twelve days was obliterated. He removed the seton, and after a short time no perceptible cicatrix remained.

He next treated in this manner a large strumous abscess, about four inches in its longest diameter, which a boy in the workhouse had on his sternum, and the case went on more favourably than he thinks it would have done had he punctured the abscess with a lancet.

In November last he was consulted by a lady, who, after a severe attack of influenza, had inflammation in some of the cervical glands, situated behind the sterno-mastoid muscle, deep-seated, and about midway between the ear and the clavicle, two of which suppurated. Hoping to produce absorption of the pus, the methods usually had recourse to for the purpose were tried without success; the matter travelled beneath the fascia, and an abscess pointed above the clavicle. A thread was inserted in this situation, including between the points about two inches of skin: the contents distilled out, but the abscess was fed from that which first formed; and finding that benefit was likely to ensue, he passed a thread through the original abscess. In two days afterwards he was enabled to remove the first seton, and in six days subsequently the second. The disease was cured, and the closest observer could not now perceive a trace of either the disease or the operation.

He has since treated four cases of strumous abscess in this way with similar results. In one case only did any unsightly cicatrix remain, and this he attributes to the thinning process having advanced considerably before the seton was applied.

He has not found any case followed by high inflammation, or much pain. In fact, the results have been satisfactory.

\* *Annales de Chimie et de Physique*, No. xxiii. p. 202.

† *Provincial Journal*, Dec. 24, 1844.

He has seldom or never had a case where pus was absorbed after he was fully satisfied it had been formed, and is, therefore, disposed to insert the seton as early as possible after the formation of pus, and remove it as soon as the cavity of the abscess appears obliterated. And it is his opinion that this mode of treatment, followed by careful dressing and judicious management, is calculated to obviate in a great degree the disfiguration and annoyance which so frequently result from the ordinary method of treating abscesses, especially those which present in conspicuous situations.

ART. 70.—*Amputation at the Tibio-Tarsal Articulation, according to Mr. Syme's method. Ether successfully administered.* By Dr. BELLINGHAM.

(*Dublin Medical Press*, June 2, 1847, p. 337.)

The patient, a boy of about twelve years of age, was admitted under Dr. Bellingham's care, in St. Vincent's Hospital, a short time since, labouring under the ordinary form of scrofulous disease of the tarsal bones in the left foot; matter had formed, and had made its way to the surface at several points upon the dorsum and sole of the foot. Being considered a favourable case for operation, and as the ankle-joint was sound, he determined to give a trial to Mr. Syme's modification of amputation at the ankle-joint.

Some days previous to the operation the inhalation of ether was tried upon the patient, without being attended with any unpleasant effect. It was resolved, therefore, to put the patient under its influence previous to the operation.

The patient was placed upon the operating table, and commenced inhaling; in about four minutes he was declared in a fit state, and the operation commenced; no tourniquet was used, pressure with the hands of assistants being made upon the artery in the thigh and leg.

A semicircular incision across the dorsum of the foot, commencing at the inner and terminating at the outer malleolus (the convexity towards the toes), was made with an ordinary small amputating knife; the knife was then carried from the inner to the outer malleolus across the sole of the foot in a line opposite to the first incision. The knife was then laid aside, and the anterior flap dissected up with a scalpel, the articulation opened, and the foot separated by dissecting out the os calcis and astragalus. This was an exceedingly tedious and disagreeable part of the operation, and occupied several minutes; the scalpel was kept near the bones, in order to avoid injuring the arterial branches by which the under flap was to be nourished. The operation was facilitated by holding the foot in the left hand, and using it as a kind of lever. The patient remained under the influence of the ether, and was perfectly insensible to pain until the foot was separated, a period of six minutes.

The anterior tibial artery was first tied, the posterior tibial had not been divided, and the plantar branches and some other small vessels only, in the posterior flap, required ligature; a very small quantity of blood was lost in the operation. The point of the inner malleolus, and a larger portion of the external malleolus, were then removed with a bone forceps. The stump was not dressed until three hours afterwards, when another small branch in the under flap required ligature. In dressing it, the upper flap was found to have retracted very considerably, between two and three inches, the under flap not at all, and the edges consequently could not be brought quite into apposition. Several points of the interrupted suture were used, with strips of adhesive plaster and cold-water dressing.

Everything went on satisfactorily. Some suppuration occurred, and the matter readily escaped near the malleoli; the ligatures came away early, the cicatrization of the stump proceeded favourably, and was nearly completed a few days since, when the patient was sent out of the hospital for change of air, as the same disease had set in in the tarsus of the opposite side. Obscure signs of this were present at the patient's admission, which, after the operation, became more developed, and seemed to progress the more rapidly as the cicatrization of the stump advanced.

The patient was not aware the foot was to be removed: he was perfectly insensible to pain during the operation, and when placed in bed afterwards he cried bitterly on seeing the stump. The inhalation was not continued so long as to pro-

duce perfect insensibility; the patient conversed with those about him while the operation was going on, and yet was at the same time quite unconscious of pain.

The only objections which it appears to me can be fairly urged against this operation are, that it is by far a more painful one to the patient than amputation as ordinarily practised, while it is a much more tedious and troublesome one to the operator. Disagreeable an operation as amputation is, under any circumstances, the tedious dissection which is necessary here, in order to form the lower flap, renders this much more so. Indeed, for this reason it is an operation which I would not willingly perform, unless the patient could be brought under the influence of ether.

I was not prepared for the extreme retraction of the upper flap, which was found to have taken place previous to the dressing of the stump. Indeed I was rather afraid of finding the flaps inconveniently long; this, however, did not prevent cicatrization from going on, and a very good stump resulted—a cast from which I had hoped to have exhibited to the meeting, but for the reasons I have mentioned it was not thought prudent to keep the patient in the hospital until the parts had perfectly healed.

[Remarks on this operation, and on the modification of it by antero-lateral flaps, as proposed by Professor Handyside, will be found in our Reports on Surgery, Vol. II., p. 206, and Vol. III., p. 243.]

[M. Banders, of the Val de Grâce Hospital, in Paris, has just performed the operation for the fourth time, by making lateral flaps and preserving the malleoli. We are informed by M. Rognetta, editor of the Journal from which we quote, that in his opinion the modification of M. Banders is preferable to the original operation of Mr. Syme, because the flap is formed by the tissues of the heel, which are hard, slightly vascular, not fleshy, subject to become gangrenous, and difficult to dissect. The operation has now been performed seven times in France, and in all with success.—*Annales de Thérapeutique*, Juin, 1847.]

The objections made by Mr. Bellingham and M. Rognetta are easily disposed of. Those accustomed to perform the operation do not find the dissection difficult, and none who have seen Mr. Syme practise it have ever considered it so. It is difficult to perform some operations from written instructions alone. Many surgeons who, like Mr. Bellingham, found it tedious and difficult, have considered it neither the one nor the other after visiting Edinburgh; and many who have been wholly prejudiced against it have adopted it with enthusiasm on seeing the evidence which this city contains of its advantages. But, supposing it were tedious, this can form no valid objection to a proceeding which has for its object the preservation of the leg; and we are at a loss to understand on what principle the hospital surgeons of London, and elsewhere, continue to sacrifice the limbs of their patients to a most injurious routine practice. The fear of gangrene need never be entertained, as experience has demonstrated that when the flap is not too long it never arises.]\*

ART. 71.—*Dislocation of the Femur on the Dorsum of the Ilium. Reduced by Kluge's method.* By VONDERFOUR.

(*Monthly Journ. of Med. Science*, June 1847, p. 926.)

The following case is reported in the "*Repertorium*," by Vonderfour. The method of reduction which was employed is one proposed some time ago by Kluge.

A servant girl, twenty years of age, fell on a slippery floor, and pitching on the left hip, sustained a dislocation of that joint. The patient was first seen three days after the accident. The left limb was four inches shortened, and rotated inwards, with the toes resting on the dorsum of the right foot, the trochanter major was displaced upwards and forwards, lying on a level with the anterior superior iliac spine, and on rotation of the limb the head of the bone could be indistinctly felt rolling on the dorsum of the ilium.

She was freely bled, nauseating doses of antimony given, and cold applications laid over the injured part. On the following morning reduction was effected in

\* *Monthly Journ. of Med. Science*, July, 1847, p. 63.



the following manner. The patient was laid on her back on a low table, so that the breech projected over the end of the table, the right foot supported on a stool, and the left held by an assistant. A strong sheet, placed between the legs as a perineal band, and brought round the pelvis, was given to another assistant, to produce counter-extension. A second sheet was passed over the lower part of the abdomen and pelvis, the ends of which were held by two or more assistants, so as to keep the patient firmly down on the table. Lastly, another sheet was passed round the upper part of the thigh, by which a fifth assistant was forcibly to draw the upper end of the bone outwards. The surgeon now taking hold of the limb, and bending it as much as possible to a right angle with the body, stooping down, placed the limb over his left shoulder, so that the lower part of the limb hung over his back. Fixing the limb in this position, and forcibly raising himself to the erect position, forcible abduction being at the same time made by the hand placed around the upper part of the thigh, the head of the bone was at once made to resume its place in the acetabulum.

ART. 72.—*Amputation of the first Carpo-Metacarpal Articulation.*

By J. H. POWER, M. D., &c.

(*Dublin Med. Press*, June 23, 1847, p. 387.)

On the front of the wrist in every individual, no matter how muscular or how fat the person may be, the anterior prominence of the trapezium may be distinctly felt at the root of the thumb. Immediately in front of this, the point of the finger can be made to sink into a narrow superficial groove, which exists between the bone and the metacarpal bone of the thumb: this groove corresponds to the articulation—it is, in fact, the anterior extremity of the joint; it can be always felt. I never yet examined an individual in whom I could not distinctly satisfy myself of its existence, and by its means ascertain at once the precise situation of the articulation. Standing in front and to the *inside* of the patient's hand, and placing the edge of the scalpel upon the prominence of the trapezium already described, I made a straight incision forwards towards the metacarpal bone of the thumb, for the distance of about half an inch: from the anterior extremity of this incision I carried a second over the palmar surface of the ball of the thumb, as far forwards as the cleft between the thumb and the index-finger. I commenced again at the anterior extremity of the short straight incision, and carried another forwards over the back part of the thumb, till it met the second incision at the free edge of the cleft. Having completed the cutaneous incisions, I next reflected with the scalpel the integument which formed the inner margin of the first incision: this enabled me to hit upon the joint with greater precision. A few short strokes of the knife through the muscles in this situation laid bare the inner or ulnar surface of the capsular ligament; this was now easily divided with the point of the knife, by commencing the incision at the groove in front of the trapezium; the joint was thus exposed. The thumb was next drawn outwards with a moderate degree of force, so as to expose the articulation completely at its ulnar side; when this had been effected, the incisions through the muscles were afterwards completed, and the diseased bones removed.

The following is the method recommended by the late Sir A. Cooper in his Surgical Lectures:—"To accomplish this operation you must begin your incision by cutting through the integuments at the inside of the thumb, nearly opposite to the first joint: you carry this incision backwards to the union of the metacarpal with the carpal bones; this incision will form a flap, consisting of integuments and the abductor muscles, quite sufficient to cover the wound that will be occasioned by the operation. After having completed this flap, the knife is then to be passed backwards from between the index-finger and the thumb as far as the trapezium, to which bone the head of the metacarpal bone is articulated. When you arrive at this position you are to turn the knife so as to make its blade form a right angle with the incision just made; you are then to carry its edge through the joint by which the integuments will be divided, and the bone is thus removed." Mr. Liston observes:—"The metacarpal bone is separated from the trapezium by passing a narrow knife, longer than that used for the fingers, from the middle of the space betwixt the forefinger and thumb, marked by the depression at the

decussation of the abductor pollicis and the abductor indicis, up to the articulation; the knife is moved from point to heel, and the handle inclined towards the forefinger. Its progress is arrested by the articulation, and if *the edge be then turned a little towards the ulnar side*, and the thumb pressed in the opposite direction, the joint will be easily opened, and the head of the bone so loosened that the blade of the knife can be passed behind it." Mr. Fergusson, of King's College, remarks,—"When the thumb and metacarpal bone are to be removed, the operation may be done by carrying a bistoury through the soft parts between the metacarpal bone and that of the forefinger upwards, until it is arrested by the trapezium; then through the joint," &c.

These operations essentially agree. In all of them, as well as in the methods at present generally adopted, the articulation is opened by passing the knife from the free edge of the web backwards, between the thumb and index-finger till it reaches the trapezium.

If any one will take in his hand a well-dissected carpus, and examine carefully the relations which its several articulations bear to each other, he will at once perceive how exceedingly close the first carpo-metacarpal joint lies to the articulation between the trapezium and the outside of the metacarpal bone of the index-finger; and he will readily understand how easily the edge of the knife, when *passed backwards between the index-finger and the thumb as far as the trapezium*, may get between this latter bone and the index-finger. I have no doubt the surgeon will be as likely to cut into this articulation as into that between the thumb and the trapezium, more particularly if he adopt the recommendation of Mr. Liston, and turn the edge of his knife "*a little towards the ulnar side*." I believe such an error as that we have now spoken of would in many instances, lead to most unpleasant consequences. An incision made between the trapezium and the metacarpal bone of the index-finger, will infallibly open the synovial membrane which lines the articulations between the carpus and metacarpus, and between the first and second rows of the carpal bones. This is an exceedingly extensive synovial membrane, and it is most extensively related to the carpal bones: any injury inflicted on it necessarily endangers these small cellular bones which are covered by it. When the membrane becomes inflamed they cannot escape, and the inflammation will be very likely to terminate in caries.

The advantages which I conceive are gained by the operation I have proposed are—first, the *readiness* with which the articulation may be exposed in the *early* part of the operation; secondly, the *certainty* with which *we may avoid wounding any of the other articulations in the neighbourhood*; and, thirdly, the surgeon can *see what he is doing* from the moment he opens the capsular ligament till he removes the metacarpal bone.

[Malgaigne describes four methods, stating that the easiest is undoubtedly the ordinary method; but the proceeding of Scoutetten, or the oval method, gives much the best results, and should be generally preferred. The method described above by Dr. Porter is the oval method nearly as modified by Malgaigne, and performed by himself. The latter author states, "I commence by a vertical incision, which ascends half an inch above the joint, and descends one inch below it; the oval incision begins and ends in the inferior end of this incision." The greater length of the vertical incision is to prevent the trapezium projecting through the wound by the loss of substance at the point of the V.—*Manual of Operative Surgery*, 1846.]

#### ART. 73.—*The Treatment of Lateral Curvature of the Spine.*

By E. F. LONSDALE, Esq.\*

(Condensed from the Author's "*Observations*," 1847.)

The question of treatment resolves itself into these points. First,—there is weakness of the vertebral column; it has then to be artificially supported. Second,—there is displacement of certain bones; the vertebræ, the ribs, scapulæ, and clavicles, which lose their natural relative position to one another, at the same

\* Vide art. "On the Nature and Causes of Simple Lateral Curvature of the Spine," Sect. II, p. 97.

time that the ligaments on one side become shortened; these bones have to be replaced, and the resistance of the ligaments to be overcome. Finally,—there is irregular muscular development of the two sides of the body, existing both as a cause and as an effect.

It is of no use to support the spine without the displaced bones are mechanically acted on, with the intention of replacing them, at the same time that means are taken to overcome the resistance of the ligaments, and it is of no use doing either of these without the action of the muscles be attended to afterwards, by endeavouring to give increased power where it is deficient. On the other hand, it is of little use attending to the muscular system only, which is done in many plans of treatment; for it is not sufficient to redress the deformity, but in many cases will only tend to increase it, if the spine be not first of all brought out of its curved position; a point which can be easily understood if the origin and the insertion of the muscles are considered, and the action they will have upon the ribs and spine, when these bones are thrown so much out of their relative position.

*The object of all spinal supports ought to be*—to combine mechanical pressure with mechanical support. [Mr. Lonsdale describes his own apparatus, which consists of a *pelvic hoop*, made of steel; a *small crutch* attached to an oblique arm of steel, firmly fixed to the centre of the posterior part of the hoop, and a *broad plate* to fit the convex part of the thorax, to keep up pressure on the expanded ribs, and act upon the curvature of the spine itself. The plate and crutch are adjusted by screws, and the former is made to act as a lever.]

The advantages gained by the spinal apparatus are these. First—the fallen shoulder is supported, and so one of the causes tending to keep up and to increase the deformity is removed. Second—the whole of the left side of the thorax remains free and uncompressed, and ample room is allowed for the expansion of the ribs. Third—the convex, or projecting side of the thorax is pressed against, and through it the spine is thrown to the opposite side by aid of the two great mechanical powers, viz., the lever and screw. Fourth—the whole of the support and the moving power act from the same part of the apparatus, namely, the centre of the pelvic hoop behind, so that all tilting or lateral motion is guarded against. Finally—the whole apparatus lies closely in contact with the body, the waist is left free and unconfined, and the shape of the figure and dress so little interfered with as to be but slightly altered.

*Of the Method of Employing the Recumbent Position as an Adjunct only in the Treatment of Spinal Curvature.*—If we desire to straighten a bent stick or rod of iron, should we stretch it by pulling upon the two ends in its long axis? Should we not rather attempt to *unbend* it, by placing the most curved part on some body to form a fulcrum, and then act upon the two extremities by applying a lever force in a direction opposed to the curve? Would not a bent stick be most easily straightened by placing the curved central portion on the knee, and then drawing or pulling on its two ends?

It appears that the principle of extension is not the best to act upon to bring the spine from the curved into the straight position; nor does it seem the most scientific, for the force tells mechanically with the least advantage, and requires that most powerful means be exerted to produce the desired effect. All curves, no matter of what nature the body in which they exist, are more easily rectified by applying the force in an opposite direction, by *unbending* them rather than by pulling upon them at their two extremities; in the former the advantage of a lever power is gained; in the latter, an extending force only can be employed.

The position by which lateral flexion of the whole vertebral column could be produced by *bending* the spine in the opposite direction to that in which the curvature had thrown it, would be the one most likely to overcome the resistance of the ligaments, and to bring the displaced bones into their natural position.

Not any English authors have recommended the position of placing the patient on the side, in order to produce the lateral flexion of the spine, and thereby to overcome the resistance of the ligaments in the most effectual manner, at the same time that the ribs and vertebrae are brought out of their abnormal position by the pressure that is made upon them.

The patient should be placed on the side on which the projection formed by the curve exists, instead of on the back, and the legs, head, and upper extremities



allowed to fall to a lower level than the trunk; by this means a sufficient power is at once gained, by the simple weight that is then exerted at either end of the trunk, to gradually act upon the spine; and to regulate itself, imitating, in fact, the straightening of a bent rod or stick, no other mechanical means are required; the weight of the legs at the one extremity, and of the head and shoulders at the other exerts a force quite sufficient to redress any slight curvature that may exist, and as much as can be borne, or it may be judicious to apply in severer cases. The object is to stretch the ligaments, and so to overcome their resistance, at the same time that the bones themselves are pressed in a direction the opposite to that in which they have been displaced, and are thus rendered more movable, and more capable of being acted upon by any apparatus that may be afterwards employed to give them support.

A couch should be employed of the following construction; it is six feet in length and two feet in width; the horizontal portion on which the patient lies consists of a framework divided into three parts: the central portion, which is the smallest, is fixed and connected to the sides of the couch, more towards the upper than lower end, to be opposite to the thorax when the patient is placed upon it. To this central portion there are two others attached by hinges, moving up and down like the flaps of a table, and which admit of being fixed at any angle by means of sliding quadrants, that pass through two bars, extending from the under part of the central portion of the couch, down to two spindles that connect the legs together. The ends of the couch itself are disconnected at the upper and lower part, so as not to interfere with the motion of the flaps. By this means the level of the legs, or of the head and shoulders, can be altered at pleasure, by letting either the upper or lower flap of the framework, or both, fall as much as may be required, and fixing them by a common thumb-screw working against the sliding quadrant underneath.

When the patient is placed upon the couch, the body is supported by a sling made of a broad belt, six or eight inches wide, attached by a strong strap and buckle on either side, to a perpendicular framework, or yoke, thrown across the couch, and fitting into it nearer to the upper than the lower end, that it may be opposite to the thorax when the patient is placed within it. This belt admits of being raised or lowered, and can be made to act upon the curve of the spine by the straps or buckles with which it is attached to the perpendicular framework just described.

The cases in which *the exercise of the muscles* may be employed with beneficial effect will be found to be the following:—Girls of spare habit, in whom the whole muscular system is weak; where the vertebræ are thinly covered with the muscles, the spinous process being prominent, the scapulæ on both sides projecting, and wanting their close adaptation to the ribs, owing to the absence of sufficient power in the muscles to keep them in their natural position; where the curvature of the spine is general throughout its whole length, and can be easily altered in one direction or the other, the bones being but loosely connected; owing to deficiency of strength in the ligaments; the shoulder of one side being higher than the other, though not to any marked extent, and the ribs of the left side, though less convex than on the right, still not compressed to an extent sufficient to cause a hollow beneath the left scapula; lastly, where the curvature has existed for a short time only, and will admit of being easily redressed by pressure made with the hands. Under these circumstances, whatever the age of the girl may be, whether before or after puberty, much may be done by increasing the development of the muscular system generally, paying particular attention to that of the muscles of the spine and upper extremities; at the same time that the health of the girl is to be improved by the administration of tonic medicines, strengthening diet, and placing her in a situation to breathe pure and bracing air. Many girls are said to grow out of the deformity, and these are the cases where they do so, when, with the improvement of the general health, the muscular system at the same time becomes more developed; but in these slighter cases the cure will be much facilitated by giving the spine artificial support in the intervals of the exercise of the muscles, to avoid the inclination there will naturally be for it to fall into the curved position again, which support may be gained by the above named

instrument, which has the advantage of not confining the body generally, or of interfering with the action of the muscles.

The cases in which the exercise of the muscles does more harm than good are those where the curvature, although it may be confirmed, may not yet be fixed, that is, the deformity may be very great, but yet there may be sufficient yielding in the spine to allow of it being moved or acted upon when pressure is made forcibly against it, where the ribs are more increased in convexity on the right side, and more depressed on the left, with a corresponding projection, and sinking of the scapulæ of the two sides, causing also the corresponding difference between the level of the two shoulders. Any increased power given to the muscles in these cases, without attempting mechanically to support the ribs and spine, and to support the left shoulder, which by its weight is tending to bear downwards and to increase the concavity, will only keep up the deformity, and generally increase it. The grand point is to bring the spine as nearly as possible into its normal erect line; to relieve the compressed ribs of the left side, by supporting the shoulder which is bearing its weight upon them, at the same time that the opposite or convex side is pressed upon by a force that gradually admits of being increased. The means by which this can be done, already described, do not from their mode of adaptation to the trunk, at all interfere with the action of the muscles, or with their increased development, while they prevent them acting injuriously upon the deformity itself.

The position that I recommend is one that throws the whole spine more backwards than forwards; which tends to redress the curvature, at the same time that the muscles of the spine are brought actively into play. Attach two pulleys or hooks to the ceiling of the room, or to an artificial framework, placed in some situation about two or three feet above the head. The patient is to stand in a position that the pulleys may be about a foot and a half or two feet behind her. She is with both hands to take hold of a stick or spindle, to which two ropes are attached, and which pass through the pulleys, having weights fastened at the other ends, sufficiently heavy to require some exertion to draw them up, the weights being increased or diminished, according to the strength of the patient; six or eight pounds in each is quite enough, and as much as the patient can raise without over-fatiguing herself. The ropes should be long enough to enable her to incline the body forwards on the hip-joints, without bending the spine itself, drawing the weights upwards as much as she can, keeping the arms extended above the head all the time, and bringing them as far forwards as the inclination of the body will admit of, without moving the feet from the position in which they were originally placed. The body is then to be brought into the erect position again by raising the trunk on the hip-joints, and letting the weights fall, and so to pull the arms behind and above the head. It may be as well to tie a knot in the ropes, to check the fall of the weights, that the arms may not be strained beyond the point of extension to which they can easily be carried behind the head.

This exercise may be repeated for a certain time daily, and as often as the patient can conveniently do so, the object being not to fatigue the muscles, but by degrees to strengthen them, at the same time that the ribs and spinal column are brought into a position the reverse of that into which the curvature has a disposition to throw them.

If this principle be well carried out, and a strong and efficient spinal support be employed at the same time, it is probable that all *slight* cases of lateral curvature may be cured without the necessity of employing couches at all.

#### ART. 74.—*Treatment of Nasal Calculus.* By HENRY COOK, Esq.

(*Boston Med. and Surg. Journal.*)

The following came under my treatment not long since :

Mrs. H., aged 25, of good constitution, had been suffering for the last eighteen months from severe headache: the pain was most intense over the frontal sinuses, accompanied by an offensive discharge of a mucopurulent character from the left nostril and throat. The pain in the head had increased to such a degree as to materially impair her memory, causing at times dimness of sight, particularly of the left eye, giddiness, with loss of appetite, and a disordered state of the digestive

organs; in fact, her general health began to be seriously affected, and in this condition she applied for advice.

On examination, the nasal passage on the left side appeared to be completely blocked up. I was first led to suppose that the obstruction might be owing to a polypus, or rather morbid growth, but on passing a probe a hard substance was encountered, about two inches from the orifice, feeling like a portion of bone in a state of necrosis. The septum was forced over to the opposite side, causing the right nasal passage to be somewhat contracted. The left lachrymal duct was obstructed, and pressure made at the inner canthus was followed by a discharge of purulent matter from the puncta. Stillicidium lachrymarum existed, and the conjunctiva of the eye was somewhat injected. The probe being withdrawn, a pair of polypus forceps were then introduced, and with some difficulty I succeeded in grasping and extracting a hard body through the nostrils. Considerable hemorrhage followed, but it was soon checked by the application of cold. The foreign body was of irregular form, rough, about an inch long by half an inch in diameter, hard, brittle, and evidently of a calcareous nature.

The patient was not aware of having introduced anything into the nose, but stated that she first observed some obstruction about eighteen months since.

Inflammation of the mucous membrane of the nose and throat followed, but yielded to antiphlogistic treatment.

[The Second Volume of the Half-yearly Abstract contains a succinct account of Calculi of the nasal fossæ, by M. Dumarquay, art. 59, p. 90.]

ART. 75.—*Description of a New Apparatus for the Treatment of Fracture of the Thigh.*  
By GEORGE BOTTOMLEY, Esq., Croydon.

(*Lancet*, July 10, 1847, p. 44.)

Having been appointed some years since surgeon in connection with an important line of railway then in progress of formation, upon which the number of workmen under my care sometimes exceeded 2000, ample opportunities were afforded me of carrying out my views with respect to fractures of the femur, and of testing their value. I invariably used an apparatus described by the subjoined sketch, which was made under my direction, and in every instance the results were most gratifying and satisfactory; for, with but one or two exceptions, it would now be difficult to discover in my former patients, either by their gait or by their mode of using the limb, which of the two had been the subject of fracture; and their recovery at the time was more than usually rapid.

The screw power of which I have availed myself has been noticed by Bowyer; but his mode of adapting it does not offer sufficient means of extension and counter-extension, and requires the use of tightly-drawn bandages, which are entirely dispensed with by my apparatus. It will also be seen that the whole of the fractured limb is exposed to view, and should the slightest contraction be observed, the remedy can be instantly applied by means of the screw, the management of which is as simple as can well be conceived.

The *modus operandi* is as follows: the belt is secured round the upper part of the chest by braces over the shoulder. A pocket in the belt receives the head of the splint, where it is made fast by a piece of tape. The foot is placed in a well-padded boot, and straps from each side of the boot are fastened to a belt round the lower portion of the thigh, immediately above the patella. The long splint has at the lower end a revolving screw, to which is attached, at right angles, a short metal rod, fitted into a brass box, fastened transversely to the sole of the boot, which can thus be moved up and down the splint at pleasure. The splint is secured to the lower portion of the patient's body by a well-padded pelvic strap, and there are one or two other straps to be used round the leg or not, according to the judgment of the attendant. When once properly applied, the screw must be turned to bring the limb to its proper length by extension, and no bandage to it will, under any circumstances, be required. Having thus established a fixed point at the head of the splint by means of the braces, it will be at once apparent that the apparatus confers the power both of extension and counter-extension, and is, moreover, so completely under the control of the screw, that it may be regulated to the greatest nicety by a mere application of the finger and thumb.



[We have examined this apparatus, and can testify to its simplicity and admirable adaptation to the indications required to be fulfilled.]

ART. 76.—*On the Employment of Cold Water in Cases of severe Burns.*

By Dr. KÜSTEN.

(*London Medical Gazette*, July 23, 1847, p. 175.)

A case of very extensive burning, treated most successfully by the prolonged application of cold water, has been recorded by Dr. Küsten. the particulars of which seem to indicate the great advantage which may probably be derived from this mode of treatment in most cases of severe burns. Dr. Küsten was first led to set a high value on the use of cold water in such cases by observing the good effects which resulted from it in the case of his own child, nine months old, which was severely scalded about the neck, chest, and abdomen, by the upsetting of a tea-kettle containing boiling water. The application of cold water was commenced immediately after the child's dress was removed: very abundant vesicative power had already taken place in the form of numerous large and small blisters. For six hours, without intermission, the application of cold wet cloths was continued; the cloths being replaced by others as quickly as they became warm. At the end of this time the smaller vesicles had quite disappeared, and the places occupied by the larger ones were indicated by more or less intensely reddened spots. The child meanwhile had fallen asleep, and it slept soundly the whole night, (the accident having occurred about six o'clock in the evening.) On the following morning the only trace of the burn consisted of a dry shrivelled appearance of the cuticle on one small spot, and this peeled off in a day or two.

The case, however, in which the beneficial effects of this mode of treatment were especially illustrated occurred in a brandy distiller, who, in consequence of the bursting of the still, was extensively scalded over the body by the boiling and blazing spirit. The man's head, at the time of the accident, was fortunately covered by a thick cloth cap, and escaped injury; but the upper part of the body, being defended only by a shirt, suffered severely. When seen by Dr. Küsten, about an hour after the accident, the patient was almost unconscious: he lay moaning, and constantly ejaculating "Fire!" After washing off, by means of a watering-pot, the layers of scraped potatoes which had been spread over the burned surface, it was found that over the whole body, down to the lower part of the thighs, there was scarcely a spot which was not more or less injured. The slightest degree of injury was manifested by vesication; but over the neck, chest, arms, and abdomen, the skin in places was quite destroyed. Dr. Küsten immediately covered the entire burnt surface with linen, and for an hour this was kept constantly cold and wet by pouring cold water over it from a watering-pot. After pausing for five or six minutes, the application of cold water was renewed, and continued for another hour, at the end of which time the man had recovered from his state of partial unconsciousness. He was then left, with directions that the application of the cold water should be continued as before. When seen in about six hours afterwards the patient was in a promising condition; his face was slightly flushed, eyes open, pulse 100. He complained of a sense of general burning, which was relieved by drinking, and by the repeated application of cold water to the burned surface. This application was continued until the patient complained of being cold. On examining the injured part next day, the places which were previously occupied by the vesications were indicated only by intense redness; the other part had much the same appearance as before; portions of the destroyed skin came off on removing the dressing. The injured parts were then dressed with cloths dipped in vinegar, and kept constantly wet by sprinkling cold water on them. The patient had some sleep during the night, and on the following day the reddened portions of skin had resumed almost their natural colour; commencing granulations were observed along the margins, where the skin had been destroyed. The pulse was 90, the thirst less intense, and the tongue less dry than on the preceding day. For nine more days the same treatment was continued, and with the happiest results, for at the end of this time the wounds were almost healed.

In the treatment of such severe wounds by this mode, the dressing must, of course, be changed at least once in the twenty-four hours.

Dr. Küsten mentions one or two other instances in which the healing of burns of various degrees of severity, was effected most rapidly and satisfactorily by this continued application of cold water. (Vide Report on Surgery in the Half-yearly Abstract, Vol. V., p. 198.)

**ART. 77.—Removal of the Lachrymal Gland.**

By I. O. PEMBERTON, F. R. C. S., Ballinrobe.

(*Dublin Quart. Journal*, Aug. 1847, p. 246.)

Mary Gibbons, aged 81 years, came to me in the month of March, 1843, with a large tumour protruding from the right orbit, inclining towards the external angle, and completely concealing the eye from view; the integuments covering it were of a purplish colour, somewhat resembling the tint of muddy port wine, and traversed by very large tortuous veins. On raising up the tumour and elevating the superior palpebra, the eye could be seen, with the cornea quite flattened, as if sliced off with a knife, caused, no doubt, by the pressure as well as friction of the tumour against it in the movements of the eyeball. The pupil was natural, and contracted on the stimulus of light. The span of the lids was small, which gave the eye a very sunken appearance. The globe was not protruded from the orbit, notwithstanding the size of the tumour. She stated that it commenced about ten years before in a small "lump" towards the outer part of the orbit; that "it continued to increase gradually until it grew over the eye," the sight of which she lost about eight years before. She could not raise the upper lid except with her hand, and she says that she had only occasionally a sharp darting pain in it, but, from its deformity, she had made up her mind to have it removed. Accordingly (assisted by surgeon Robertson of the 69th regiment) I performed the operation. My first incision commenced at the junction of the frontal and nasal bones, and continued along the superciliary ridge, close to the eyebrow, extending to about half an inch or better beyond the external angle of the eye. I then made another incision from the point of my first, and carried it along the anterior surface of the tumour, at such a distance from the ciliary margin of the lid as to leave sufficient, but not too much, integument, for a superior lid, and, by making the two incisions meet at their extremities, thus removed an elliptical portion of the integuments, but leaving the *ligamentum palpebrarum* untouched. Having freed the tumour from its external covering, I next very carefully separated it from the roof of the orbit with the handle of the scalpel, gently drawing it forwards as I went along; but it was buried so deep in the orbit I had to use great caution for fear of injuring the globe of the eye upon which it lay, and to which it was partially attached by adhesions of delicate cellular membrane: however, by a little care and management I dislodged its deeply imbedded portion, and separated it from the conjunctiva, which was reflected on the portion of the lid left, to which also it was adherent, and removed it. There was not an ounce of blood lost, neither any vessel requiring a ligature wounded. I brought the edges of the wound together, and kept them in position by a few stitches of interrupted suture, and adhesive plaster, and applied water dressing and a bandage. She bore the operation remarkably well, and walked down the street to her lodgings. She stated she could now see everything with the right eye, but not quite so distinct as with the other; this arose, I imagine, from the flattened state of the cornea. In a week's time all the wound had healed except at its external angle, near a suture, where a very small abscess formed: but this was discharged and soon healed, leaving scarcely a mark of the extensive incision to be seen. In my mode of performing this operation I differed from those who had previously removed tumours from the orbit, and I think I rendered it simpler and quicker in its performance, with less dissection and pain to the patient, and leaving no deformity behind; for, in the second incision, I divided, and removed with the tumour, a quantity of loose and stretched integument, which, if left, would probably produce ptosis, as the muscle could scarcely again regain (from its great attenuation) contractile power sufficient to elevate the lid afterwards. The tumour, which is the size of a large orange, was divided into two lobes, the smaller one lying buried

deep in the orbit, the larger being external; it was composed of dense fibrous tissue of homogeneous consistence, of a whitish colour, and had no appearance of blood-vessels. The superciliary ridge at its outer margin was completely absorbed, so that one could bury the top of the index-finger in it. I saw this patient a few months since, three years after the operation; there was no mark to be seen; she could see with the right eye as well as the other, and there was no appearance of any return of the disease.

ART. 78.—*Strangulated Hernia treated successfully by Opium.*

By Dr. BUTLER LANE.

(*Provincial Med. and Surg. Journal.*)

The plan I am about to advocate consists in narcotising the patient by the free and continuous administration of opium.

The first case to which I shall refer was one of oblique inguinal hernia, occurring to a female about forty years of age. The previous history was somewhat obscure, but it seemed probable that slight protrusion and incarceration (probably omental in its nature) had existed for some time, and unequivocal symptoms of strangulation of the hernial tumour had existed at least three days. The swelling had enlarged considerably, there was much abdominal pain and tenderness, obstinate constipation, constant nausea, and copious vomiting of decidedly stercoraceous character. The symptoms had suddenly supervened, and gradually increased in intensity. In the first instance the stomach had retained large doses of cathartic medicine, castor oil, and calomel, though without any aperient effect; but now everything was rejected as soon as swallowed. All the usual medical means available had been unsuccessfully resorted to, and the taxis had been carefully and repeatedly applied. The tumour had now become exceedingly tender, the countenance assumed an anxious expression, and the pulse was accelerated. There could be no doubt that the operation was desirable, and that without delay; but to persuade the woman to submit to it was impracticable. I again employed the taxis unavailingly. A cathartic enema was then ordered, and any further procedure was remitted till the following morning.

Our patient was no less refractory and obstinate than before; her danger was imminent, and, in fact, death seemed almost inevitable. The state of depression rendered a tobacco enema objectionable; it was, however, agreed to try it, but though its sedative influence was fearfully powerful, yet it did not seem to afford any advantage, no fecal evacuation being obtained, and the stercoraceous vomiting and other symptoms continuing as before. As a last resource I then suggested the administration of opium in doses of one grain every hour.

I saw the woman next day with Mr. Stilwell, and was agreeably surprised at the change which had taken place. Twelve doses of opium had been administered, and she was fairly under its influence, having the appearance of a helpless state of intoxication. She had slept much, and when roused her answers and conversation were very incoherent. The pulse had increased in power and diminished in frequency. No complaint was made of abdominal pain, and there was much less tenderness in the umbilical region and the site of the tumour. The sickness had ceased, and food had been taken and retained. The improvement was permanent and progressive. A simple enema was administered that evening, and brought away much fecal matter. In the course of the day the tumour became spontaneously much reduced in size. For some time subsequently a small swelling remained in the groin; and whether it ever disappeared completely I am unaware.

A woman, aged 70, suffering severely with a catarrhal attack, presented symptoms of obstruction of the bowels, and on examination a femoral hernia was discovered in the left groin. She said she had first perceived the swelling two or three months previously, and it had seemed, within the last few days, to increase materially from the violence of the cough. The taxis and other remedial means were unavailingly resorted to, and the symptoms had existed forty-eight hours. At that period I found the tumour the size of a large walnut, free from heat or pain; neither was there any abdominal tenderness. The tongue was somewhat furred and dry, but there was no great heat of skin; the pulse did not exceed 84,



was regular, and not deficient in tone. The woman's chief complaint was of intense nausea and violent sickness, coming on with the paroxysms; any movement or attempt to change her position would also occasion it, and on taking any nourishment it was immediately rejected; with the continued vomiting, stercoraceous matter followed in abundance. I applied the taxis some time, and with considerable force, but unsuccessfully. A large enema with castor oil was administered, and, beyond a little gruel, no nourishment was to be attempted.

No favourable change had resulted the following morning; night had afforded no repose, and the retching and vomiting had been almost incessant. The enema had for the most part been retained some hours, but its evacuation had been unaccompanied by fecal matter. The constitutional depression was more manifest, the pulse had become accelerated, and some pain and tenderness were experienced both in the abdomen and in the tumour. Bearing in mind the success which had attended opiate treatment on the former occasion, I suggested its adoption in the present instance, as there was great aversion to the operation on the part of the patient and her husband. One grain was administered, to be repeated every hour.

After the administration of four more doses the tumour was found to have diminished to one-half its former size, the patient still continuing free from pain and sickness. A large injection of gruel with castor oil was then thrown up the rectum, and ample evacuation of feces took place. The relief was permanent. A small swelling remained in the groin, and still continues, probably containing a portion of incarcerated omentum. In the words of Mr. Allan, "*Thus was this patient saved the risk and pain of a serious operation, by a remedy every dose of which brought relief and comfort.*" (Vide Report on Surgery, in the present Volume.)

ART. 79.—*On the Forms of Urinary Fistula and their Treatment.*

By WILLIAM COLLES, F. R. C. S. I., Surgeon to Dr. Stevenson's Hospital.

(Condensed from the *Dublin Quart. Rev.*, Aug. 1847, p. 57.)

Of these urinary fistulæ we may distinguish two very distinct forms; one having its origin in a purely local cause, and the other constitutional. The former may arise from an obstruction to the free passage of the urine through the urethra; and as it is that form which is chiefly noticed by authors, we shall first consider some points in connection with it. This obstruction may be caused either by a stricture of the urethra, or it may be a consequence of a rupture of the canal, which, being torn across, has been allowed to unite obliquely; or it may arise from a total obliteration, owing to sloughing or ulceration of a portion of the canal. When the fistula is a consequence of stricture, it is generally found in those cases in which the stricture has been neglected, allowed to become firm, hard, and close, or when it has been improperly treated by the too frequent or too forcible introduction of instruments, or by the incautious application of caustic.

The disease commences by the formation of an acute abscess, attended with considerable fever and constitutional disturbance, increased frequency in the calls to pass water, and increased difficulty and straining in evacuating the bladder, attended with severe scalding pain in some one spot of the urethra. The patient complains of a considerable swelling of the perineum, which prevents the urine flowing, and obliges him to keep the legs wide asunder, as any attempt to close them would be attended with great suffering from the pressure on the abscess. Hence he must lie constantly on his back, with the knees fixed and far apart. On examining the part we find a general fulness in the perineum, not amounting to a circumscribed tumour; sometimes a blush of redness, but often no discoloration of the integuments. No sense of fluctuation is afforded to the fingers, but rather a boggy feel, amounting at times to that œdematous state which retains the impression of the fingers. The abscess being bound down by the fascia, wants the distinctive marks of a common superficial abscess. Here we cannot wait for the abscess to point or become more evident; we must open it at once, and freely. The urine will pass through the incision, sometimes immediately after, and sometimes not for two or three days.

The opening gradually closes, till there only remains one large granulation, through which the urine flows; the parts round the fistula become consolidated

and hard; the skin puckered, giving the appearance of a neck round the orifice; and the fistula comes to be lined with a peculiar membrane, and is permanent.

We are told that the disease, when fully formed, is easily distinguished by a red papilla in the perineum, with surrounding hardness; and that when the patient passes water the urine will be seen to flow through it. This is not, however, always the case; for the fistula may open near the anus, and be so small and tortuous that the urine will not appear externally till some time after the act of micturition shall have ceased. We have known a patient make water before leaving home, and not perceive any urine pass through the fistula till he had walked two or three streets, and we came to examine and make pressure on the fistula.

In examining these fistulæ we cannot, as in fecal fistula, rely on the probe as a satisfactory guide; for though it will sometimes pass through the external opening, and touch a solid instrument in the urethra, yet in the majority of cases the course of the fistula is so tortuous, and leads off in a direction so distant from the urethra, that no probe can follow it in all its windings. Hence arises the great difficulty to trace and discover the exact situation of the internal orifice of the fistula, which, if we could find, would often afford us most material assistance in our further proceedings.

In speaking of the treatment of the disease, surgeons tell us that the urine constantly flowing through these fistulæ alone prevents them from closing, and therefore it will be necessary to prevent this; and that it can only be effected by causing the urine to pass through a hollow instrument, either constantly worn in the bladder, or introduced every time the patient wishes to pass water; and that this and this alone can effect a proper cure. This is certainly a severe method of proceeding, and not always necessary or successful; and by it we confine the patient to his bed, or to his home for five or six weeks, and we often find his health become seriously impaired from the confinement. The constant presence of the instrument causes irritation, inflammation of the bladder and urethra, frequent calls to pass water, straining, and mucous deposits, with some streaks of blood in the urine. If we still persist in retaining the instrument, the patient is likely to be seized with that form of fever denominated "urinary fever,"—a most severe and often dangerous complication. If we resort to the introduction of the instrument every time the patient wishes to pass water, we often find we do more harm than good. We irritate the urethra, the introduction of the instrument becomes more difficult, and we find, after a time, the stricture much increased in extent, irritable, and close; or that, perhaps, other strictures and fistulæ have appeared.

Hence I would say, that as the stricture is the cause of the fistula, we should direct our chief attention to the removal of it by the simplest means. If we introduce a catheter or bougie, perhaps every second or third day, we find that, according as the stricture is dilated, the fistula will close, less urine passing through each time. If we find this method fail, after a fair trial, we can resort to the constant wearing of a catheter, when the urethra will have become more accustomed to its presence. It has been at times found that even where the catheter has been constantly worn, the fistula has made little or no progress towards healing, although the urethra has been fully dilated, and not a drop of urine has passed through the fistula for several weeks. Here, if we remove the catheter, and allow the patient to go about, we find, when perhaps we are considering about our further proceedings, an evident improvement in a few days; the discharge both of urine and pus from the fistula becomes less, the surrounding hardness disappears, and the case goes on to a complete cure.

We are by some recommended, in order to expedite the closing of these fistulæ, to use various caustic applications; but if we use a solid caustic we find we cannot get it much farther than the external opening, as the canal is so small and tortuous; and, to be effectual, it should be applied to the internal opening. And when we consider the course of these fistulæ, and the force that would often be required to drive an injection to the urethra, a surgeon would dread the fluid caustics becoming extravasated into the cellular membrane, and producing incalculable mischief.

Reasoning from analogy of fistula in ano, we have been told to divide these fistulæ into the urethra, and make them heal from the bottom; but we find very little analogy between the two operations; and, besides, we cannot find, and there-

fore cannot divide, the internal orifice of these fistulæ. The various methods recommended will sometimes fail in effecting a cure of the disease, and we are obliged to have recourse to an operation.

When we cannot by any of the methods usually recommended find the urethra behind the obstruction, we must resort to a more tedious operation. We place the patient as in the operation of lithotomy; use no staff or instrument in the anterior portion of the urethra; let an assistant hold up the penis and scrotum, but make no pressure; leave the parts as much as possible in their relative positions; make a free incision along the raphe of the perineum; deepen the incision by cutting always in the same line till we have got through a depth of parts previously calculated on, recollecting that the apparent depth at which the urethra lies is much increased by the hard and unyielding nature of the altered structures through which we cut. Sometimes we feel, by the want of resistance to the point of the knife, that we have entered the urethra; often we have not even this to guide us; however, having carried the incision deep enough, we proceed to search for the urethra. The eye will seldom be able to distinguish it at the bottom of the incision; sensation conveyed by the finger, or a bent probe, will often inform us if we have to cut deeper, or the probe may enter the opening in the urethra and pass on to the bladder. We are told by desiring the patient to pass water, that we may perceive the opening in the urethra, if it has been effected; but it is seldom that a patient suffering under a protracted operation can direct his attention to exert the combined actions necessary to this evacuation, and even if he did, we can see the urine welling up, and filling and overflowing our incision, but we fail in seeing the opening in the urethra from which it issues. Having got the probe passed, and on it directed a gum elastic catheter, into the urethra, behind the stricture, the remainder of the operation is comparatively simple. Pass a probe from the incision up the urethra till we arrive at the obstruction; then introduce a staff into the anterior portion of the urethra; divide the parts between the two instruments until one will freely pass into the portion of canal occupied by the other: then cut off the head of the catheter which is lying in the bladder, fix this anterior portion of the catheter to the end of the probe, and thus pass it through the orifice of the penis. In two or three days' time we are able to introduce a larger instrument into the bladder, the stricture will be removed, and the parts will heal gradually and firmly.

Having now described the form of fistula which arises either from obstruction to the free passage of the urine, or where the urethra is free, still has a local disease as its cause, I will next proceed to consider another form which was first noticed by my father in his clinical lectures, and has not received the attention it merits. It differs materially in its symptoms and treatment from those already mentioned, which may be considered as local, this form being more intimately connected with a deranged constitution.

If the patient be an intelligent man, who can give a clear account of his disease, we learn from him that the formation of matter in the perineum was not attended with any inflammatory fever, nor with the throbbing, severe pain usually attending acute abscesses; but he will tell us that he, perhaps, occasionally noticed some scalding in micturition. some small tumour in the perineum, which did not give him much uneasiness or attract his attention; and that the progress of the abscess was slow, a considerable time existing between its first appearance and its opening. At times the patient will have no knowledge of the existence of the abscess till it bursts, or arrives at a very considerable size. He will tell us that he enjoys good health, but on closer inquiry we find that he has been for sometime in a low feverish state. His pulse is much quickened: he has considerable thirst, with slight impairment of his appetite, and loss of flesh, probably more remarked by his friends than by himself; when questioned he often declares himself in perfect health, the countenance is pale, with, probably, a tinge of yellow; the nails do not exhibit the healthy state of the adjacent part, but resemble a thin transparent layer of ivory laid on a surface of a purple hue. In many such cases there is some affection of the chest, generally cough, with copious expectoration, some distress in breathing, particularly when attempting any extra exercise.

If we turn our attention to the local appearances we observe the orifices of the fistula rather patulous, but no fungous papillæ projecting from them; there is very



little hardness round the openings, or leading from them, and no puckering of the skin forming a kind of neck round the orifice. They generally exist in great numbers externally, and appear as if punched out of the skin; but we seldom find more than two openings internally. If we introduce a probe into one of the openings, we find it passing away from the urethra; often from the same opening it will run in different directions. When we come to examine the urethra of the patient we cannot discover the existence of any stricture; and we can pass a full-sized catheter into the bladder without meeting any obstruction. Such is the history we receive from the patient, and such are the symptoms we observe in this form of disease, and we see that in both respects it differs materially from that previously described. In the one the general health is good; the abscess commences with inflammatory fever, is acute in its course, and causes much suffering; the fistulæ are few in number, marked by a red fungous papilla; there is an impediment in the introduction of a catheter, or evidence of some local disease. In the other the health is much impaired; generally old chronic cough, with expectoration, is present: a low sinking feverishness exists: the abscess is chronic, continuing for a long time, often unnoticed till it opens: the fistulæ are in great numbers, presenting merely wrinkles or perforations in the skin; the urethra is so free that a large catheter will pass readily into the bladder.

If, according to the generally received opinion and established rule of practice, we were to promise this patient to effect a cure by making him wear a full-sized catheter in the bladder, with the view of keeping the fistula free from any passage of urine, we should certainly have to suffer the mortification of a disappointment.

Should the surgeon be rash enough to undertake any operation, with a view to the cure of the fistulæ, he would not only signally fail, but would render the state of the patient worse than before. We have known a surgeon operate in such a case, and a patient return to the country, the urine flowing through the large wound, which had not made the slightest effort to heal. We regret that we have no mode to guide us to the successful treatment of these cases. Of course, on first visiting the patient, the surgeon is tempted, both for his own satisfaction and also his patient's, to introduce a catheter, but even this proceeding requires caution, for we know that in such broken-down constitutions this operation, performed as carefully and gently as possible, has excited urinary fever, and even led to a fatal termination. Having satisfied ourselves as to the state of the urethra, we should be cautious how we repeat the operation, for if the catheter be introduced too frequently, even should the patient escape the urinary fever, still we may induce an irritation and unhealthy action in the urethra, which may give rise to stricture.

Our local applications will, therefore, be more with the view of alleviating the sufferings of the patient, and allaying local irritation and inflammation. If we direct him each time he goes to pass water, to make pressure on the part, or to keep a moderate constant pressure on the fistulæ, so as to prevent so much of the urine passing through them, we shall find, after a time, that some of them will become smaller, and even close. This and the occasional introduction of the catheter, at long intervals, should be our principal local remedies. Our chief reliance, however, must be in an improved state of the general health, and the removal or alleviation of the cough by those various means used in such cases, and which it is not our province here to mention.

Should we be so fortunate as to effect the removal of this, and restore the patient to good health, we shall find that the fistulæ will close almost without any local treatment, if not, we shall have him in a condition to bear the application of such other measures as we should expect to succeed.

We find, in too many of these cases, that the chest affection, or other organic lesion will go on, and in the end phthisis or hectic fever will carry off the patient.

Thus we perceive that there are two distinct kinds of urinary as of fecal fistulæ—one form local, acute, and requiring active treatment, and often operation; the other depending on the deranged state of the constitution, not permitting much local interference, and entirely forbidding any operation for its cure. It can only be relieved by constitutional treatment.

ART. 80.—*Removal of a Pebble from the Trachea by Tracheotomy and Inversion. The Value of Stethoscopic Diagnosis.*

(*Guy's Hosp. Reports; London Medical Gazette*, Aug. 13, 1847, p. 303.)

H. W.—, æt. 13, was admitted into Guy's Hospital, on Friday morning, at 2 A. M., 30th of July, 1847, with the following history:—On Thursday, the 29th of July, he was running a race with another boy, and had placed two pebbles in his mouth for the purpose of keeping it moist, (a common custom on such occasions), and, while urging his speed to the utmost, on taking a full inspiration, one of the pebbles slipped from his mouth, and it seems passed into the larynx down into the trachea, as he was immediately seized with a fit of coughing and some dyspnœa, which, however, soon subsided; but the boy immediately expressed his conviction that the pebble was in his "windpipe," as in the act of coughing he could distinctly feel it moving up and down the passage; but, at the same time, said that it never passed above a point to which he directed attention (the lower edge of the cricoid cartilage), which would account for the absence of the violent paroxysms that attend the presence of a foreign body in the glottis.

Mr. Pritchard, of Foot's Cray, was sent for, and proceeded to place him with his head downwards, in which position he remained for some time, but without the desired object being obtained. This experiment was three times unsuccessfully repeated, producing each time violent coughing and difficulty of breathing, and ecchymosis of the conjunctivæ resulted from his forcible straining.

During the whole period of this ordeal, the boy said that he could feel the pebble move up and down in his windpipe. Mr. Pritchard sent him to Guy's Hospital, where he was placed under the care of Mr. Bransby Cooper.

On his admission, the patient was free from cough or dyspnœa, his respirations were 20 in a minute, and he slept composedly in the usual position.

Friday, 2 P. M.—He was first seen by Mr. Cooper, who, by auricular exploration, could not obtain sufficient evidence to convince him that any foreign body was still in the trachea, and argued the probability of the abnormal sounds being produced by the substance having irritated the glottis; or that, if actually admitted into the windpipe, it might have been expelled. Mr. Cooper requested Dr. Hughes to examine the patient, who found roughened tracheal breathing, with wheezing on the right side, and to a less degree on the left, but acknowledged the physical signs were unsatisfactory as to the positive proof of a foreign body being still in the trachea, probably in consequence of the general irritation of the trachea and larger-bronchial tubes.

On consultation, it was determined not to interfere at present, but to wait for more certain indications of the actual presence of the foreign body, to keep the patient perfectly quiet, and to have him constantly watched. In the evening it was observed by Mr. Hilton that the left lung was nearly inactive, scarcely any murmur being audible. The breathing, however, was not attended with any distress.

31st.—Passed a comfortable night in a sitting posture, with occasional cough, but without any violent dyspnœa. The left lung remains in the same condition; but, in the course of the day, after a slight fit of coughing, the respiration became quite audible in it.

On Sunday, August 1st, he remained much in the same state.

On Monday, 2d, he was examined by Dr. Addison, who found diminished supply of air to the left lung; but as the boy had undergone much examination, he agreed with Mr. Cooper, as he was not suffering from urgent symptoms, that he should be kept perfectly quiet until the next day, when a more complete exploration might be made, and the propriety of an operation determined.

On the 3d Dr. Addison examined him. Breathing had returned completely in the left lung, and was puerile there, but at the apex of the right lung it was more full, and accompanied with a slight roughness. This was the state of the breathing found both at the anterior and posterior aspects of the chest. In all the lower part of the right lung the breathing was pure and loud. The percussion over the apex of the right lung was less clear than on the left side. When the patient

coughed a movement was heard and felt, as of a foreign body impelled by the air at each operation.

From the present signs and the previous history of the case, no doubt could now exist of the presence of a foreign body in the upper branch of the right bronchus, that impeded the passage of air into the upper lobe of the lung. The shifting of the impediment from the left to the right side, as first noticed by Mr. Hilton, was much in favour of this opinion. It was resolved that the operation of tracheotomy should immediately be performed, in order to allow of the inversion of the patient with comparative safety.

The operation was performed in the usual way by Mr. Cooper. A free opening was made into the trachea, and four of its rings divided by a bistoury. During the operation, both before and after the opening had been made in the trachea, the patient coughed violently, and stated that he felt the pebble move; but he thought it was expelled through the opening. A probe was passed into the trachea with a view to feel the pebble, but without any other effect than that of making the patient cough violently. He was now inverted and struck forcibly on the back, when he said he felt the stone move above the wound in the trachea; and while in this position, during the act of inspiration, the pebble fell through the wound into Mr. Hilton's hand.

Since the operation the boy has been free from any constitutional disturbance; he breathes freely, no air passes through the wound, and he may now be considered quite convalescent.

#### SECT. IV.—RARE SURGICAL CASES.

ART. 81.—*A Case of Monomania caused by a Depression in the Skull, and Cured by the Operation of Trephining.* By C. L. ROBERTSON, M. D.

(*Lancet*, Aug. 14, 1847.)

No. 455, aged 23, a sailor, was admitted into the Cumberland Lunatic Asylum on the 10th of February, 1825. Ten years prior he fell from the mast of a ship, which accident was followed by an attack of acute mania. In six weeks he recovered the use of his intellectual faculties, but continued so ungovernable in his temper and violent in his conduct, as to render him unfit to be at large, and to necessitate his removal to the asylum.

On admission he complained of frequent pains in the part of the head on which he fell, and also entertained the delusion that these pains were caused by his mother beating him. Otherwise his intellectual faculties were sound. Various symptoms of disease of the moral principle were present; he was morose, taciturn and insolent. He entertained an ungrounded dislike to his relations, and was subject to violent fits of passion. After being some time in the asylum, his delusion gave way, and the intellectual powers of his mind remained sound; his conduct, however, continued ungovernable, and his language abusive; while kind words made no impression on his wayward temper. He still complained of pains in the injured part.

On examining his head, I discovered a very distinct depression on the posterior superior margin of the right parietal bone, to which situation he referred the pains. In consultation with my colleague, Mr. Furness, consulting surgeon to the institution, it was decided that the depressed portion of skull should be removed by the trephine.

On the 3d of January, 1846, the operation was skilfully performed by Mr. Furness. The patient bore it well, and the wound healed without a bad symptom. The portion of the cranium removed was healthy in appearance on both of its surfaces. It adhered very firmly to the dura mater, requiring considerable force for its removal. It was altered considerably in form, appearing to have been indented rather than fractured, which is not improbable, seeing the accident occurred to the patient when only 13 years of age.

By the 1st of February, his conduct was, and had been since the operation, in every way improved. He had had no bursts of passion—answered civilly when



spoken to, and was grateful for the relief afforded him. He looked forward with pleasure to his return home, which was promised to take place as soon as the weather improved. He had, for the last fortnight, been working on the farm, and stated, that since the operation he had been free from the pain in the head, from which he formerly suffered.

On the 20th of March he was discharged "cured," having, since the performance of the operation, shown no symptom of his previous malady.

ART. 82.—*Chronic Suppuration of the Joints, &c., after Scarlatina—Puncture of the Abscesses—Recovery.* By H. BERNARD, Esq.

(In a Communication to Dr. Graves. *Dublin Quart. Journal*, May 1847, p. 325. Condensed.)

Martin Byrne, aged 5 years, of a fair complexion and delicate frame, was attacked with scarlatina, during the month of November, 1842; the tonsils were greatly inflamed and swollen, and required the use of the solution of nitrate of silver.

About a week or ten days after the disappearance of the eruption, a uniform swelling, without any discoloration of the integuments, and accompanied with excessive pain, presented itself behind the right ear; in a short time it extended above the ear in one direction, and below the mastoid process in the other. As soon as the fluctuation became evident, I made a puncture in the centre of the swelling, and gave exit to about an ounce of purulent matter, of thin consistence, of a canary yellow colour, and without any offensive odour. After a few days, matter escaped from the external meatus of the same side; the discharge from this outlet was always increased by pressure on the external abscess. As the first opening I made had a tendency to close, I made another incision, lower down, over the mastoid process, which was kept open till the matter ceased to flow. Almost immediately, another abscess formed at the back of the neck; this was opened, and matter discharged of a similar nature to that above mentioned.

The right elbow-joint was next attacked, commencing with great pain, and considerable constitutional disturbance. The pain was speedily followed by swelling, which attracted attention the sooner, owing to the attenuated state of the arm and forearm. As the swelling of the joint increased, the integuments around became thin and transparent, and traversed with an unusual number of veins. A sense of fluctuation soon became apparent, especially in the spaces between the olecranon process, and the condyles of the humerus, in which situations the synovial membrane was protruded by the distending fluid. Judging from the character of the abscesses which formed about the neck, their progress, &c., I had little hesitation in concluding that purulent matter was secreted by the synovial membrane of the humero-cubital articulation, and was distending its sac. As the hectic fever was daily increasing, and the poor boy becoming greatly emaciated, passing many nights without sleep, I made an incision between the olecranon and external condyle into the joint, and gave exit to not less than two ounces of purulent matter, in every respect similar in consistence and colour to that we have before described as having been discharged from the ear and the neck. The joint became now greatly diminished in size, the patient experiencing much relief. A linseed-meal poultice was ordered to be applied, and the arm to be kept quiet. The matter continued to exude from this opening for a fortnight or three weeks, when the left elbow-joint became similarly affected, and was lanced in due time, giving vent to a quantity of matter, resembling in character that which was discharged from the other elbow. Many weeks elapsed before these joints were restored to a healthy state.

The treatment adopted at this period consisted of tonics, and any nourishing diet which the child wished for. He, for the most part, refused to take wine and broths, and was principally supported by cow's milk, of which he generally took from three to four pints every day.

In a short time, another abscess formed over the sacrum; when mature, this was also lanced, and after discharging purulent matter for a week or ten days gradually closed up.

I now began to flatter myself that my little patient would be relieved from further suffering, and that, although reduced to the greatest extent of exhaustion and

emaciation, he would soon recruit his lost strength. However, to my great disappointment, new symptoms presented themselves in an unexpected quarter. He now complained of most acute pain in the right lumbar region, which completely destroyed his rest at night, and rekindled fever in the system. The pain was speedily succeeded by fulness of the abdomen on the same side, which increased gradually, accompanied by great distress. Suddenly, a small tumour, about the size of a Spanish nut, made its appearance in the corresponding groin, beneath Poupart's ligament, and external to the femoral vessels; it soon increased to the dimensions of a pullet's egg, giving a distinct sense of fluctuation. From the mode of its formation and progress, I concluded that I had a psoas abscess to deal with. As the former operations were attended with so much success, and afforded so great relief to the patient, I resolved to open this abscess likewise. Some days, however, elapsed, before the parents of the child would give their consent. I now made a valvular incision into the lower part of the sac, and gave exit to not less than a quart of purulent matter, of the same canary yellow colour, and resembling, in every respect, that which was discharged from the ear, neck, elbow-joints and sacrum. I dressed the wound with lint and adhesive plaster, and after a few days, allowed more matter to flow out. This treatment was continued from time to time, until the abscess contracted, and ceased to discharge pus. From this time, the boy commenced to regain strength, and the hectic fever to decline.

A space of nearly eight months elapsed from the time this child was first attacked with scarlatina to the period of his recovery. I paid my little patient a visit during the present week. He appears in the enjoyment of good health; the right elbow-joint is, however, in a state of ankylosis, the forearm being permanently bent on the arm (I repeatedly directed the parents to use passive motion, as the only means of guarding against this termination); he has, however, the use of the left arm, and walks well.<sup>7</sup>

[In illustration of suppuration of the joints after eruptive fever, the reader is referred to "a case of universal purulent deposition into the joints, with separation of the epiphyses, occurring as a sequel to small-pox."—*Medico-Chirurgical Transactions*, 1838, p. 148.]

## PART III.

### MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

#### SECT. I.—MIDWIFERY AND DISEASES OF WOMEN.

ART. 83.—*On Inflammation and Ulceration of the Cervix Uteri in the Virgin Female, and its Connection with Leucorrhœa and Dysmenorrhœa.* By Dr. HENRY BENNET.

(*Lancet*, July 17, 1847.)

[AT the time of the publication of Dr. Bennet's admirable treatise on the above class of uterine diseases, from a defect in experience he was not able to state whether inflammatory affections of the cervix were frequent in the virgin state or not, but he was disposed to think that they were not. Subsequent experience has, however, convinced him that this opinion is unfounded, and he has ascertained that ulceration is not uncommon in the virgin, and that when present it is a frequent cause of menstrual disturbance, particularly of dysmenorrhœa and inveterate leucorrhœa. At the same time that he advances the above fact as an important step in the pathology of this period of female life, he does not disguise the difficulty which, from motives of delicacy far more imperative than in the married woman, surround the only certain means of investigation and treatment; and he therefore urges the necessity of a full acquaintance with the symptoms which should lead us to suspect inflammation and ulceration of the cervix in the virgin, in order that we may not, without good grounds, subject her to the disagreeable examination by the speculum. In furtherance of this object he writes as follows:]

In many of the cases that I have seen of ulceration in the virgin female, the most prominent symptom has been dysmenorrhœa carried to an extreme degree. Indeed, as I have already stated, I am convinced that many of the cases of extreme and obstinate dysmenorrhœa, which are at last considered hopeless, and merely palliated by narcotics, will be found on careful scrutiny to be cases of ulcerative inflammation of the uterine neck.

Some females suffer great uterine pain during menstruation, from the very commencement of the functions. It would seem as if, with them, the physiological congestion which is inseparably connected with menstruation could not take place without great pain being experienced. This may be either from the uterus being naturally morbidly susceptible to the stimulation occasioned by the presence of blood, or it may be that the monthly congestion is morbidly great. Whatever be the explanation of this fact, I have ascertained, by long and careful observation, that these females are peculiarly liable to uterine inflammation, and it is principally among them that I have found the cases of inflammation of the cervix that I have observed in the virgin.

When the cervix is inflamed and ulcerated, whether the menses have previously been easy or difficult, they generally become painful, sometimes agonizingly so, all the local pains above enumerated being much exaggerated, and extreme cutaneous tenderness being often experienced over the lower part of the abdomen, and sometimes all over the pelvis and thighs. From what I have stated, however, it will be evident that it is not the existence of pain during menstruation



that indicates the presence of ulcerative disease, some women always suffering pain, even in the absence of uterine inflammation, but the presence of pain, when it did not previously exist, and its increase when it did. In a word, to obtain any information that may avail for the purposes of diagnosis from the examination of the menstrual function, the previous uterine history of the patient must be interrogated. The physiological variations which occur in menstruation, both with reference to pain, duration, periodicity, &c., are much too great for it to be possible to establish any precise standard by which we may judge of the state of any given patient. It is with herself only, *when in health*, that we can rationally compare her if diseased.

In addition to the symptoms above enumerated (the local symptoms of ulcerative inflammation of the cervix uteri), there are the general symptoms to be considered, and they will often throw great light on the real nature of the case. It has not appeared to me hitherto, as I have already stated, that a mere white leucorrhœal discharge—that which I have described as often preceding and following the menses, or any occasional uterine congestion—reacts, to any very great extent, on the health, although it is universally considered to do so by all writers on female diseases. Such a discharge often exists in chlorotic, scrofulous, and phthisical females; but in them I believe it to be merely the result of irregular, disordered menstruation, itself caused by the general cachectic condition of the individual. In other words, I believe that in these cases the leucorrhœa is only one of the symptoms of a general cachectic, anemic affection, and not the cause of the anemia. In the absence of some tangible cachexia, I may say, that I scarcely ever meet with extreme general debility and weakness co-existing with leucorrhœa, without finding, on mature examination, that there is inflammation and, generally speaking, ulceration of the uterine neck. This is a clinical fact which admits of easy explanation.

When we consider attentively on what bases are founded the opinions that are now prevalent on this subject in the profession, it becomes difficult to reconcile them to pathological laws. Is it altogether consistent with our knowledge of the diseases of mucous surfaces to admit that a mere secretion from the mucous membrane of the female genital organs can, in the course of a short time, utterly deprave the functions of digestion and assimilation in a healthy young female, and reduce her to a state of extreme anemia? Such is certainly not the case with other extensive mucous membranes. Thus we often see a very abundant mucous secretion from the pulmonary surfaces, continuing for months or years, without the general nutrition being much impaired, especially when this exudation is not the result of inflammation, but of congestion—of increased vital activity only; in a word, a hypersecretion. But we can, on the other hand, easily understand that the presence of ulcerative inflammation in an organ so intimately connected by its sympathetic nervous system with the functions of animal life as the uterus may, and indeed must react, to a great degree, on the functions of assimilation and nutrition. This, in my opinion, is the true, the real, and the hitherto unknown explanation of the general vital depression of the weakness which is so frequently seen connected in the female with leucorrhœal discharge. It is not the discharge that reduces her vital powers to so low an ebb, but it is the sympathetic reaction of ulcerative inflammation of the uterine neck on the functions of life.

From these considerations I may deduce the following rule: that if, in addition to one or more of the local symptoms described (in the absence of any decided cachexia), there is also very marked general debility, it is a powerful reason for narrowly examining the nature of the case, as its very existence is a presumption that the patient is suffering from some deep-seated lesion of the uterus, and more especially from ulcerative inflammation of the uterine neck.

An attentive perusal of the above brief synopsis of the local and general symptoms of inflammatory ulceration of the cervix uteri will show the reader that very fair presumptive evidence of the existence, or non-existence, of the disease may be obtained, in many instances, without resorting to physical examination.

Whether the existence of the disease be considered certain or doubtful, an attempt may be made to cure the patient by simple palliative remedies, injections, rest, &c., if the circumstances of the case admit of delay; but if they do not, or if these means, having been tried, have failed, then a digital examination of the

uterine organs should be resorted to without hesitation. The welfare of the patient is the paramount consideration, and if it thus becomes absolutely necessary to acquire more information respecting the state of the uterus, all other considerations must give way.

A satisfactory digital examination of the uterus may be nearly always made in a virgin, without injury to the hymen, especially when the vagina and external genital organs have been relaxed by long-continued congestion and inflammation. The hymen is nearly always sufficiently dilatable to admit the index, introduced slowly and with proper care. Generally speaking, the os and cervix are reached with ease, the cervix not being retroverted, as it is when inflamed in most married females; and when once the finger has reached the os, nearly all doubts may be solved. If the cervix is free from disease, it is soft, and the os is closed; if it is inflamed and ulcerated, the cervix is enlarged, swollen, and the os is more or less open and fungous. This open and soft state of the os may also exist from mere inflammation of the cavity of the cervix.

When the existence of ulcerative disease of the uterine neck has been thus recognised in a virgin, what course must we follow? As this form of disease reacts so disastrously on the female economy as absolutely to endanger, indirectly, the life of the patient, not to speak of its making her a burden to herself, and to all around her; as, likewise, all non-instrumental means of treatment are totally inefficacious when the disease is severe, I think there can be no room for hesitation. The speculum must be used, without dividing the hymen, if possible; after its division, if it cannot be introduced otherwise.

In many cases, as I have before stated, the hymen is naturally very lax, or it may have been relaxed by disease; I have, therefore, had a very narrow, small, bivalve speculum made, with which I am often able to gently dilate the hymen, and examine the patient without any preliminary division. When, however, this organ is fleshy or inextensible, which it generally is in females rather advanced in life, it does not yield, and it becomes necessary to divide it. This may even be necessary in order to be able to admit the finger. In a case in which I was consulted lately, the vaginal orifice was not larger than a crow-quill; the patient, a young person aged 19, was rather stout and muscular. If it thus becomes necessary to divide the hymen, the incisions may be made on each side, but that which gives most room is one made in the median line, inferiorly, in continuation of the raphe of the perineum, owing to the extensible nature of the soft tissues at the lower commissure of the vulva. This is also the region where the hymen is naturally the most fleshy and the thickest. If possible, it is as well to allow the divided surfaces of the hymen to heal before any attempt is made to use the speculum, in order to avoid giving useless pain to the patient. The healing of the incisions may be promoted by touching them once or twice with the nitrate of silver. Unless this precaution be adopted, the cicatrization is apt to be tedious.

Once the nature of the disease has been recognised, and its extent and character have been instrumentally ascertained, the case falls into the general category of ulcerative inflammation, and the treatment must be conducted on the principles which I have repeatedly laid down in my previous writings on this subject. The only important peculiarity which I have remarked in this disease in virgins is, that it generally presents itself under the acute or inflammatory form. The cervix is enlarged; but it is generally the swelling of congestion and inflammation, not the chronic nutritive hypertrophy so often observed in married females. The ulceration is also, generally speaking, vascular, irritable, and inflammatory. This peculiarity, however, is not an unfavourable one, as these cases are precisely those which yield the easiest and the readiest to antiphlogistic treatment, coupled with mild cauterization. I have, nevertheless, met with one very intractable case. The patient was forty years of age when she came under me, and had been a sufferer very many years. The cervix was chronically hypertrophied to a considerable extent.

I am aware that the foregoing details will be read with considerable surprise, even by those practitioners who have paid the most attention to uterine diseases. They are, however, the expression of facts, and as such must necessarily be accepted eventually by the profession, as soon, indeed, as the subject is properly investigated, when much suffering will be alleviated. I have now by me the

notes of seven cases of severe ulcerative inflammation of the uterine neck in virgins, which I have observed and treated within the last year, four of which occurred in private practice, and three at my dispensary. In all these cases the patients had been ill for years, the symptoms which they had presented having resisted every attempt at treatment. Most of them had been under the hands of very able and experienced practitioners, who had brought to bear on their cases all the information of which the profession is at present in possession. Nevertheless, their sufferings had gone on increasing, the general health had become more and more debilitated, and it is certain that they must have eventually sunk, directly or indirectly, if the real cause of their illness had not been discovered and remedied.

Experience having thus taught me that severe ulcerative inflammation of the cervix uteri is occasionally met with in unmarried females, that it is then the cause of great functional uterine disorder, and of extreme debility, and that by physical examination only can the disease be fully recognised and treated, I have no hesitation in stating that such an examination, in these exceptional cases, becomes imperative. As, however, an investigation of this nature is a serious matter, and must be equally repugnant to the feelings of the medical practitioner and of his patient, it should only be resorted to as an extreme measure—as a last resource. No practitioner, either, who has not acquired an accurate knowledge of these forms of uterine disease in married females, ought, in my opinion, to resort to it on his own responsibility, as he may by so doing unnecessarily expose his patient and her friends to great mental distress, through his ignorance of the real meaning of the symptoms which she presents. It is only by habit that the finger becomes educated to these diseases, and acquires that delicacy of tact which enables the practitioner to discover ulceration of the cervix by digital examination; and unless, on the other hand, the finger has detected, nearly to a certainty, the existence of extensive ulceration, no practitioner would feel warranted in adopting such measures as the division of the hymen, and the subsequent use of the speculum.

ART. 84.—*On Inflammation and Ulceration of the Cervix Uteri in Females advanced in Life.* By Dr. HENRY BENNET.

(*Month. Journ. of Med. Science*, March 1847.)

Inflammation and ulceration of the uterine neck is not confined to young and middle-aged females; it is occasionally met with in women rather advanced in life, and who have long ceased to menstruate. Nor can we feel surprised that it should be so, when we consider that inflammation is a morbid process, which may attack the tissues and organs of the animal economy at any period of their existence. Anatomical and physiological peculiarities may render its manifestation rare in some organs during certain periods of life, but they cannot shield them entirely from its influence. Before menstruation has set in, and after it has ceased, the uterus and its appendages are in a state of repose, of low vitality, which renders them much less liable to inflammation than during the age of sexual activity. But even at that period the uterus, and more especially the mucous membrane covering its lower segment, is occasionally the seat of inflammation; ulcerative inflammation of the cervix uteri existing years after the cessation of the catamenia may, nevertheless, be considered a comparatively rare form of disease. When I have met with it, generally speaking, it has seemed to be the lingering remains of inflammatory disease present at the time the menses ceased. In a few cases it has appeared to have originated spontaneously, and in a few others I have known it to occur as the evident result of neglected gonorrhœa.

When menstruation ceases, the uterus and ovaries gradually fall into a state of atrophy. This gradual atrophy of the uterine system exercises, I have no doubt, a most salutary influence over any local inflammation that may then exist. Under its influence, I feel certain, very many females gradually recover from unrecognised uterine inflammation, which has for many years inexplicably rendered life a burden to them. Indeed, it stands to reason that if women so situated escape the dangers of cancerous degeneration, which is always to be feared, the absence of the menstrual flux will materially change the pathological condition. The uterus being no longer subject to the periodical congestions which render its inflammations so difficult and so tedious to subdue, the disease, no doubt,



in many cases, gradually wears itself out, and thus a spontaneous cure is obtained.

In some instances, however, this desirable process only takes place partially. The gradual atrophy of the uterus, now become nearly a useless organ in the economy, is still called into action; it limits the disease, diminishes the hypertrophied tissues, and partly heals the ulceration, but it has not the power to completely cure the disease. The latter still lingers on, giving rise to the greater part of the symptoms which are usually observed in this form of inflammation. The most constant and the most prominent symptom is generally the pain in the sacrum, or lower part of the back. The pains in the ovarian regions, and in the hypogastrium, are also occasionally complained of, but by no means so universally. The peculiar backache of uterine diseases has appeared to me, as a general rule, much more intense in women thus advanced in life than in younger persons, although the latter may present much more extensive disease. Sometimes a leucorrhœal discharge is complained of by the patient, but not always. This fact admits of easy interpretation. The ulceration being often small, and there being but little vaginitis, there is no great amount of muco-pus formed, and what little is secreted is absorbed by the parietes of the vagina. As might be anticipated, the patient seldom experiences much bearing down. The inflamed cervix being more or less atrophied, as well as the uterus itself, the latter generally retains pretty nearly its normal position in the pelvis, not falling, as is the case with younger women, when the cervix is hypertrophied.

On examining digitally and instrumentally, the cervix is found small, indurated, sometimes lobular, (but in that case the lobules are regular, and their divisions radiate towards the centre.) the os is slightly open, and presents within its contour the velvety sensation of ulceration. The vagina is in some cases rather rosy and congested, whilst in others it presents the blanched appearance peculiar to it in advanced life. To the eye the cervix appears of a vivid red hue, and the ulcerated surface seems irritable and angry; the granulations are small, and there is no appearance of luxuriance or of fungosity about them. The cavity of the os is closed at a short distance from the external orifice. There the physical characters of inflammatory ulceration of the cervix, at an advanced period of life, are the same, however the disease may have originated. They are often accompanied by considerable sympathetic disorder of the general health, especially when the pain in the back is very continued and very severe, which, as I have stated, is not unfrequently the case.

I have found this form of ulcerative inflammation much more intractable, and much more difficult to cure than that which is met with in younger females. It may be, that the very circumstance of the disease having withstood the influence of the changes that take place in the uterine system on the cessation of the menses, stamp it as of an intractable nature; or it may be that chronic inflammation once established in a mucous membrane of a person advanced in life, has a greater tendency to resist treatment, and to perpetuate itself, than it would have in a younger subject. Whatever the interpretation, the fact is certain. A small ulceration, the size of a fourpenny-piece, resting on an atrophied cervix, will resist the most energetic treatment for months, giving rise, at the same time, to the most extreme pain in the back and sides.

The treatment which I adopt in these cases is similar to that which I follow with younger patients, and consists in repeated cauterization with the nitrate of silver or the acid nitrate of mercury. leeches, astringent injections, rest, and attention to the general health; and, generally speaking, averse to resorting to deep cauterization, owing to the ulceration not resting on a larger hypertrophied basis; and when I do resort to it I prefer the actual cautery to the Vienna paste. A very light touch of the cautery will produce a considerable change in the vitality of the part, and yet only be followed by a superficial eschar. I have now under my care a woman, aged 52, who ceased to menstruate some years ago, and whom I had been treating for several months without having succeeded in finally healing the ulcerated surface, when I resolved to use the cautery. Within ten days after the separation of the eschar the sore has all but healed.

ART. 85.—*On Ulceration of the Cervix and Os Uteri as an Occasional Cause of Dysmenorrhœa.* By SAMUEL EDWARDS, M. D., Physician to the Dispensary, Bath.

(*Prov. Med. and Surg. Journal*, Sept. 8.)

[The following paper is noticed rather as affording a favourable evidence of the increased attention which the diseases of the os and cervix uteri are receiving than as advancing any new facts. The frequent dependence of dysmenorrhœa upon ulceration of the os uteri has been insisted upon by Dr. Bennet in a previous article, and, as may be seen by a reference to our Report, is prominently treated of by Mr. Whitehead. The author introduces the subject by some remarks connected with the use of the speculum, in which we entirely agree; and to the effect that the objection on the score of delicacy is greatly exaggerated, and indeed is frequently maintained by the failure on the part of the practitioner to urge the importance of the examination. We can truly affirm that in our own practice we have never met with a refusal even on the part of the most delicately educated female, when she has been made to comprehend the necessity for the operation; but, on the contrary, have frequently been surprised at the unexpected readiness with which it has been consented to. After some preliminary observations to the above effect, the author thus proceeds:]

Having during several years availed myself of many opportunities of examining diseased conditions of the cervix and os uteri, and having preserved accurate notes of many of the most important cases that have fallen under my notice, I prefer exemplifying by two or three of them some of the causes, and the symptoms and treatment of simple or inflammatory ulceration of the os and cervix uteri, thus showing how readily these evils are under the control of medical art when attacked by judicious topical applications. The first case, which I shall now relate, I have taken care to be more minute in, as it well illustrates the symptoms, general and local, which the mischief sooner or later is sure to produce; the others I shall give less in detail, as this will be sufficient for the object I have partially in view, viz. to confirm the statements as to the ready curability of these evils by such means as are referred to by Lisfranc, Jobert, De Loury and Peraire, and since made more particularly, perhaps, known by Dr. Henry Bennet.

I. The case just referred to is that of a lady, 24 years of age, usually of robust health. A few days after marriage she was attacked with severe inflammation of the vagina and vulva, whilst in London, and there treated very judiciously by a surgeon. A slight leucorrhœal discharge, however, continued on her leaving the metropolis, and existed more or less for thirteen months, at which time she first came under my notice. During a portion of this interval she had been attended by a friend in Brighton, from whom she received some little relief. On her applying to me she complained of a constant pain in the loins, a sense of heat and dragging in the pelvis, and sexual intercourse during this period had been at times extremely painful; the leucorrhœal discharge was abundant, of a dirty-yellow colour, and occasionally sanguineous; her health had suffered much, and she had become nervous and dyspeptic; her tongue was pale, and furred in the centre; pulse quick and irritable. Menstruation had always been natural, but since her marriage *she had always suffered much pain.* The usual treatment having been had recourse to previously, and an examination only by the finger having been proposed and adopted, I recommended the employment of the speculum, which was immediately acquiesced in. The annoyance of the disease to both husband and patient prevented, I may remark, a false delicacy from stepping in the way to a chance of relief. On the introduction of the finger the vagina was found relaxed, the upper part irritable, and hotter than usual; the os uteri was high, and directed backward; the cervix was large, and of an ordematous feeling, the anterior lip being most so; on the finger being carried over it, an inequality was observed, a part appearing rough, which was more sensitive than the remaining portion. This was more apparent towards the os uteri.

The speculum revealed an inflamed appearance of the cervix, as evidenced by its red and shining hue. The anterior lip which first came under view was seen ulcerated to about the size of a shilling, being depressed a little below the surface, and covered with dark red granulations, which bled on the slightest touch of the

speculum. The os uteri to one-half its circumference was surrounded by the ulceration, and from the orifice flowed a small quantity of milky-coloured mucus, a proof, as it is asserted, and I believe correctly, that the neck of the uterus partakes of the mischief.

The mucus having been wiped away from the part, I applied the nitrate of silver thoroughly, and introduced it a line or two into the os uteri. Little or no pain was occasioned. An injection of decoction of poppy, to be used twice a day, and a mixture of infusion of gentian, with solution of potash and tincture of henbane, were ordered. Six days after, improvement had taken place, the secretion was less, and the ulcer certainly contracting; the eschar had come away on the fourth day. The decoction of poppy was changed for an injection of the diluted compound alum solution of the London Pharmacopœia: the mixture to be continued, and a pill, containing a grain and a half of mercurial pill and extract of henbane, requested to be taken every alternate night. Rest in the horizontal posture and freedom from all sexual excitement were enjoined. From this period I used the nitrate generally, with two exceptions, twice a week for seven weeks, when the ulceration had entirely disappeared, as also the leucorrhœa; the softness of the cervix had returned fully, and its size was considerably diminished; the dyspeptic symptoms had all abated, and she had progressed equally in strength. This patient left Bath in February last. Two months after she became pregnant, and she still remains free from the old complaint.

II. The second case is that of a patient I attended at the Eastern Dispensary of Bath, unmarried, aged 31. She had been confined, after a long and lingering labour, in Bristol, six months previously; she soon recovered, in a week being up and about her usual avocations. After the lochia had disappeared a leucorrhœal discharge set in, accompanied with pain in the back, and a bearing down. She was attended professionally, but received little benefit. About two months prior to her applying to me, blood appeared with the discharge at times, and to the extent of several ounces. This continued up to the time of my first seeing her, when she was weak and much emaciated; complained of headache and loss of spirits and appetite. On examination, the cervix was found low in the vagina, greatly enlarged, and considerably indurated. The speculum discovered an ulceration of at least an inch in its widest diameter on the right side of the cervix, covered with florid granulations, and raised above the margin of the surrounding texture. The mucous membrane was much injected, the os uteri open. In this case also the nitrate of silver was freely applied, and rest enjoined. A sulphate-of-zinc injection, and the usual remedies for restoring the lost tone of constitution, were prescribed. After nine weeks' treatment (the nitrate having been applied over the whole of the cervix once, occasionally twice a week) the ulceration was healed, the leucorrhœa with its accompanying symptoms had left her, and her health was vastly improved. I examined this patient about three weeks after she had ceased attendance at the dispensary, and found the cervix in a normal condition and position.

III. Case third is that of a lady, aged 40 years, mother of six children, who applied to me in April, 1845, under the following circumstances: In January of the year previous she became pregnant, and soon after leucorrhœa set in, accompanied with pain in the hypogastric region, a sense of weight on standing, and great irritability of the meatus urinarius, causing frequent desire to micturate. These symptoms continued without medical advice, and on May 7th she aborted; a large quantity of blood was lost, and for three weeks she was confined to her bed or couch. After this most of her former symptoms disappeared, excepting a slight dragging sensation of a sickening character, as she described it, whilst standing long, especially if she had previously walked. In the November following she again became *enceinte*, and about two months after the old symptoms reappeared; and not valuing them as she should, she allowed them to continue without seeking advice until the commencement of March, 1845. At the fifth month she again miscarried. The uterine symptoms continuing, I was consulted in April. I found the digestive organs disordered, and her general health was unsatisfactory. She complained of deep-seated hypogastric and lumbar pains, and a distressing sensation on standing; the leucorrhœa was trifling. On examining, the cervix was found lower than usual, and its density as well as volume in-



creased; it had much resistance, and was tender. The speculum disclosed the os uteri patulous and entirely engaged with ulceration, extending from which were two small patches of ulceration, about the size of a fourpenny-piece, the one anterior, the other on the right side of the posterior lip; both had dark red granulations, much depressed below the surface of the surrounding part, and bled on the speculum pressing. The whole of the cervix and upper third of the vagina were much congested; the former I freely incised in several places, which bled freely. A warm bath was ordered, and a warm opiate injection to be used night and morning; a mild laxative was prescribed, and rest enjoined.

Three days after this I again examined; the congestion was much relieved; the nitrate of silver was now first applied to the ulcerations, as well as slightly to the whole cervix and upper fourth of the vagina. Oxide of zinc with extract of conium was ordered twice a day, and a grain of the mercurial pill every night. This plan of local treatment was continued to the commencement of July, when the volume and density of the cervix had considerably lessened; the ulcerations had healed, with the exception of the margin of the os uteri, which was still ulcerated and open; the pencil of nitrate of silver was introduced about two lines, and repeated five times, when all *visible* mischief disappeared. There still, however, continued a muco-purulent fluid exuding from the os uteri, and accordingly I introduced a probe with a little lint, wetted with a solution of the nitrate, on three occasions, at a week's interval, when the character of the discharge altered to that of a transparent mucus. In the November following she became pregnant, and in August, 1846, I attended her at the full time in her accouchement.

IV. The next case is that of a female, 46 years of age, mother of two children; has been a widow two years. A bearing down and leucorrhœa have afflicted her for three years; she has procidentia uteri, but no complete prolapsus; menstruation is not deranged; complains of pain in the back and behind the pubis, aggravated when the bowels are relieved. The discharge varies; sometimes it is white and very abundant, at others thin and streaked with blood, but never offensive. She had previously been healthy and stout, but now is much emaciated. She has had many remedies tried, but the disease was never investigated by the speculum. Examining with the finger, the vagina was very relaxed; the cervix uteri very large, and a little indurated; the os patulous, and its edges thick. There was little tenderness except over the posterior lip, where the speculum discovered a large irregular ulceration, an inch in its longest diameter; the granulations were numerous, and on a level with the surrounding part. The nitrate of silver was applied freely over the whole cervix; an injection of nitrate of silver was prescribed, and the citrate of iron ordered twice a day; the cold hip-bath directed to be used if practicable. The caustic in this case was applied at intervals of a week (occasionally oftener) for six months; during one month of this time a vaginal suppository of belladonna and mercurial ointment was inserted every other night. At the end of this time, the ulceration had healed, the discharge had all but ceased, and the system had recovered a healthy tone. The size of the cervix and body of the uterus had much diminished, as evidenced by examination, as well by the rectum as by the vagina. The procidentia was so much relieved that she could walk about with comfort without the aid of any bandage.

V. The last case is that of a young woman, aged 32 years, at present under treatment at the Eastern Dispensary of Bath. I am desirous of relating it, as it presented the most extensive ulceration I have met with in a young unmarried woman. I have made many inquiries relative to her character, and believe her to be a highly respectable and chaste young female. She applied to me on the 11th of June, at the request of the physician who last attended her. She states she has been suffering from constant pain in the back; a burning deep-seated pain in the pelvis; a discharge, muco-purulent in character, and varying in quantity, occasionally tinged with blood; and debility upon the increase between three and four years. During this time she has been the patient of several of the Bath medical practitioners of the highest repute. Two of these gentlemen diagnosed ulceration of the uterus, and treated it with astringent injections, and the system with tonics generally. The circumstance just mentioned I wish to call especial attention to, as it shows to how lengthened a period ulceration may extend unless topically treated, and how rapid the cure when such treatment is put in operation.

At the time of this patient first applying to me, the symptoms above mentioned were in full vigour, added to which, she mentioned that walking had been so painful as almost to be impracticable, and that there had been much dysmenorrhœa, which had increased during the last twelve months. Prior to her first noticing her uterine symptoms, menstruation was always perfectly natural. Dyspeptic symptoms had also become very prominent. An examination with the speculum was at once permitted on an explanation of its uses, and the probable benefit which would accrue to her. The vagina was small, and along its upper half of a red purplish hue; the cervix was tumefied but soft, and of a uniform red colour; the anterior lip was the larger. The os uteri was patulous, and its whole margin ulcerated; the ulceration extended in an irregular way over nearly one half of the posterior portion of the cervix, and was uneven and very deep. The touch of the speculum was painful and occasioned a little blood; the same effect was produced by the slightest touch of a piece of lint. The mucus from the os uteri was of an opaque white colour. I immediately applied the lunar caustic to the whole of the ulcerated cervix; no pain was occasioned; an injection of sulphate of zinc and opium, and a mixture of the infusion of gentian, with solution of potass, were prescribed, as also a pill every other night of mercurial pill and extract of hemlock.

On the 22d she again attended, when she stated all her symptoms had abated; the ulceration and tumefaction of the cervix were decidedly diminished. The caustic was again applied, and from this time was used twice a week, (with one exception during menstruation, which, by-the-by, was attended with considerably less pain.) up to the 13th of this month, when the cervix was seen reduced to almost its normal size, and the whole of the ulceration healed, except that round the os, which had become superficial. The cervix and mucous membrane of the vagina had resumed their dull pale colour. The system generally had become strengthened, and the dyspeptic symptoms had all but vanished.

[Upon these cases the author founds the following remarks, premising that each may be considered as a type of a class of cases of which he has met with numerous examples.]

In the first case described, the cause of the ulceration was evident, arising from vaginitis, extending to the cervix uteri.—a not unfrequent occurrence in a greater or less degree in the early days of marriage. A prominent symptom during the thirteen months prior to my seeing her was dysmenorrhœa, a circumstance to which I shall refer by-and-by, and to which I would peculiarly call your notice. It is interesting also to observe that this patient remained sterile during the time that the disease was existing: but, about six weeks after the cure was complete, pregnancy took place. The same cause of which I shall speak by and by, in relation to dysmenorrhœa, will readily account for it.—viz., the partial blocking up of the uterine neck by congestion, and the muco-purulent discharge. Dr. Bennet, in his treatise, states that he is inclined to believe that pregnancy does not take place whilst the patient is suffering under this disease, but he has since narrated, I think, a case, and one in my own practice clearly proves its occurrence. I have been asked whether the introduction of the caustic pencil into the os uteri does not tend to contract or altogether close up the passage. The above case, with others, sufficiently answers the query.

In the second case narrated the symptoms came on directly after a tedious labour, where, doubtless, excoriations of the os uteri had been produced. Getting about again earlier than consistent, congestion was favoured, the lacerations did not heal, and thus inflammation and ulceration succeeded. Pregnancy certainly predisposes to this affection, and a laborious labour or abortion is sure to occasion congestion, and very frequently excoriations around the cervix.

In the third case related, abortion was evidently occasioned in two instances by the disease; and it is worthy of remark, that the second pregnancy appeared to light up the disease after it had apparently been cured. This we should *a priori* anticipate, that congestion, or aught that favours increased circulation in the part, might develop or encourage the continuance of it. I cannot speak positively, but there is every reason to believe that this individual became pregnant whilst suffering in a slight degree from the evil.

In the fourth case, a procidentia uteri existed as an effect of the disease; the body and cervix uteri were in a condition of chronic hypertrophy, and it must be

apparent to every one. knowing how the uterus is balanced, as it were, in the pelvis, how readily the slightest change in its volume is liable to alter its position. I feel confident that many, very many, cases of procidentia uteri may be traced to this cause. I may remark that I have found the employment of vaginal suppositories most beneficial in uterine diseases; the use of them in the case before us was of marked benefit in diminishing the size of the cervix, and relieving irritation.

The last case I have drawn up to exhibit the extent at which the disease will arrive in a young unmarried woman, and to show how inefficient treatment is that is not directed to the seat of the disease. At the end of the six weeks during which this patient has been subjected to the cauterization, she is comparatively well; the improvement, too, in her general health has kept pace with the local improvement. I have also related it to show peculiarly a connection between ulceration of the neck and dysmenorrhœa. I have for some months noticed this connection in several cases which have fallen under my observation, but especially so in the case before us, and also in one other which I regret to say I kept no notes of. It was in a lady of 27 years of age, who had suffered from dysmenorrhœa in an extreme degree for six years. Many and various had been the remedies advised by almost as many medical men, when I proposed the employment of the means recommended by the late Dr. Mackintosh, of dilating the os uteri by the aid of bougies, which I had long desired to put in practice. An examination, however, with the finger discovered to me an irregularity and tenderness about the os uteri, the whole cervix appearing swollen. The symptoms which she certainly had of ulceration were all saddled by me upon the dysmenorrhœa. This being the case I had a small speculum made, and on introducing it found the margin and neighbourhood of the os superficially ulcerated. I applied lunar caustic, and had the satisfaction of seeing her entirely cured of her dysmenorrhœa in about three months. I was thus led particularly to notice the symptom of painful menstruation in all the cases I have since had of congestion and ulceration of the neck of the uterus, and in those where the uterine passages were most concerned this symptom was prominent. Such being the case, might not many of the most obstinate cases of dysmenorrhœa that we meet with be thus accounted for, and thus relief obtained for that, "the frequent return of which," as Dr. Mason Good says, "embitters the life of the patient?" Certain it is, the case I just spoke of I at first treated as a case of dysmenorrhœa, thus mistaking a symptom for the disease. In this fifth case at the dispensary, I should assuredly have done so too, had not my attention been previously aroused. These observations seem to confirm the views of the late Dr. Mackintosh and of Professor Simpson, that dysmenorrhœa is sometimes caused by a naturally contracted uterine passage. This cause cannot be difficult of explanation, when we remember that the contracted cervix may become more contracted, and perhaps closed by the congestion which occurs at the catamenial period.

[Dr. Edwards has only used the nitrate of silver as a caustic, regarding the operation of nitric acid and potassa fusa as violent and uncertain. His paper terminates with the following aphorisms:]

1st. That dysmenorrhœa is occasionally only a symptom of disease arising from congestion and ulceration of the os and cervix uteri.

2d. That sterility is a frequent attendant, though not a necessary condition, the mechanical obstruction being sufficient to account for it as well as for the dysmenorrhœa.

3d. That abortion is occasionally produced by it.

4th. When the os uteri, as well as the cervix, is ulcerated, the mischief extends from the former to the latter. The os uteri is generally the last to yield to remedies.

5th. That in the generality of cases that have occurred to me the nitrate of silver has answered all the purposes of an efficient caustic.

ART. 86.—*Treatment of Inflammatory Induration of the Cervix Uteri by deep Cauterization with Potassa Fusa.*—Dr. Simpson states, in "The Monthly Journal of Medical Science," that he agrees with others in regarding the general dependence of leucorrhœa upon inflammatory ulceration and induration of the cervix uteri. The



cure by the application of leeches, counter-irritation to the sacrum, &c., is tedious. Various local escharotics—partly to destroy the indurated tissues by direct decomposition, and partly to soften down the remainder by new inflammatory action—had been in modern times employed for the same purpose, and with much more certain and expeditious effect. Dr. Simpson has found the common potassa fusa far more manageable, speedy, and certain than any other method. He used it through the speculum, applying a stick of it freely with a proper caustic holder to the ulcerated and indurated tissues. It required to be rubbed, or held *strongly* for a time, against the part which was to be destroyed. In general a piece, three quarters of an inch or an inch long, was melted down. The decomposition produced by it often caused a hissing sound. If the induration is extensive, and the whole cannot be removed at once, increased action and absorption are set up in what remains, and the parts adjacent become softened and diminished in size. Absorption in this way was truly one of the results of inflammation, though still an undescribed termination. In some aggravated cases, two or more applications of the caustic are required, at intervals of eight or ten days. Pelvic cellulitis, or any other bad result, has never been seen to follow. The appearance after the operation is as if a portion had been clean cut out with a knife. A large quantity of vinegar and water is immediately thrown up through the speculum to neutralize the potassa, and prevent it from injuring the sound parts. A copious purulent discharge usually follows for several days, requiring the use of astringent washes, or zinc ointment pessaries. When the whole of the induration is once removed, the remaining ulcer heals rapidly and permanently. An ulcer over a diseased part may be cicatrized, but it is almost sure to break out repeatedly till the induration is reduced.

[The "Lancet" of this date (July 1847) contains what is intended to be a critique upon the above treatment, but as the writer's name is not quite so well known as Professor Simpson's, his animadversions will, we imagine, attract but little attention.]

**ART. 87.**—*Singular Case of Delivery, at Full Term, without Operative Aid, through a Pelvis diminished by Malacosteon to a transverse diameter under 1 inch, long diameter of 2½ inches.* By Prof. SIMPSON.

(*Monthly Journ. of Med. Science, July 1847.*)

[After some preliminary remarks as to the diminished diameters of the pelvis, which have been by older obstetrical authorities considered as calling for the operations of embryotomia and the Cæsarean section respectively, the Professor relates the following unique case, the details of which we slightly abridge:]

Mrs. D., æt. 34, whilst in early life, at the age of 24, and two years after marriage, became the subject of malacosteon, from which she became so deformed as to have shrunk from an average height to a dwarf-like figure of four feet in height. Up to June 1846, she had never been pregnant, but at that time she became so.

At the time of her bespeaking the attendance of Mr. Wiseman, a vaginal examination was made, and it was ascertained that the pelvis was distorted, but that induction of premature labour was out of the question, from the date of the pregnancy. In March 1847, she was seen by Dr. Simpson, who gives the following account of her:

The uterine tumour was high and pressed to the right side; the fetal pulsations were distinct. The sacrum was straight above, so that its promontory did not probably encroach on the groin, but its inferior extremity was much curved forwards. The transverse diameter was so diminished as to render it impossible to introduce two fingers between the tubera ischia; hence this diameter was evidently under an inch. Posteriorly, or opposite the sacro-sciatic ligaments, there was transversely more space, but the strong anterior curvature of the coccyx served to curtail this diameter, and to prevent the probability of its dilating to three, or at most four fingers' breadth.

Under these circumstances, with a living child of eight months, Dr. Simpson concluded, as all the patient's medical advisers had previously done, that the

Cæsarean section was the only practicable mode of delivery. Nature, however, provided for the mother a more safe method.

Having agreed to operate by the Cæsarean section, Dr. Simpson proceeded to the patient's house (a distance of 30 miles) on receiving a note from Mr. Wiseman, stating that labour had commenced; but to his great astonishment learned on his arrival that the woman was delivered, and without instrumental aid of any kind. The circumstances were as follows:

The infant had been dead, *in utero*, for some time: it appeared of its natural length, measuring  $18\frac{1}{2}$  inches from the crown to the heel, but it was atrophied to a great degree, weighing only three pounds two ounces. The head seemed large, but its increase was due to putrefaction. The brain was diffuent, and the head had the appearance of an elongated and flattened body, half filled with fluid contents; and such, in fact, it was, for all the cranial bones were separated, and floating in the liquefied cerebral matter. The chest and abdomen were also pliable, but not in so disintegrated a state as the head.

This condition of the *fœtus* afforded an easy explanation of its transit through the mother's deformed pelvis; but in order to have ocular proof that the *fœtus*, even in that state, could pass through so small an opening as the mother's pelvis was known to be, Dr. Simpson procured some iron plates, which he had perforated into oblong openings of  $2\frac{1}{2}$  by  $\frac{7}{8}$  of an inch, and through this the child was drawn without difficulty. The placenta was atrophied. The recovery of the mother was uninterrupted.

[Upon this case Dr. Simpson remarks as follows:]

1st. It has taught me, and is calculated to teach others, a strong lesson of caution in regard to *prognosis*, under apparently the most desperate circumstances.

2d. The case affords a striking illustration of the well-known remark of Denman, "That the resources of nature in everything which relates to parturition are infinite, and constantly exerted for the preservation both of the infant and parent, yet when the two objects are incompatible, the life of the child is almost uniformly yielded to that of the parent." The modes in which nature brought about this unexpected result in the present instance are worthy of special notice. For, *first*, she set up diseased action in the placenta, which prevented the proper nourishment and growth of the *fœtus*. *Secondly*, she carried this state of marasmus to such a degree as at last proved fatal to the child, without inducing that expulsive action which generally soon follows the death of the infant. *Thirdly*, the dead infant was retained so long a time, that not only the bones of the cranium, but those of the face and base were separated from each other, and the head and other parts of the body rendered compressible. *Lastly*, the emaciated and putrid mass was finally expelled by natural uterine contractions. Each step in this process was thus necessary for the success of that which followed.

3d. Does this case suggest to us modes of practice in similar complications? The case shows that a child may pass through an opening of very small dimensions, provided it be in a compressible state. So far it evidently suggests that the induction of abortion at the fourth or fifth month, when the head of the *fœtus* is still soft and reducible, would succeed, in such extreme deformities, in saving the mother many of the dangers which accompany delivery at a later period. [In the present case this time had long gone by when the patient first applied for assistance.] The induction of premature labour at the seventh month would not, of course, have sufficed with a pelvis of so small dimensions, unless we could modify the operation so as to produce the death of the child, and also to cause its retention in the uterus. Now, we have no means of inducing the alteration in the placenta; nor am I acquainted with any measures which would destroy the life of the infant without at the same time inducing labour. The retention, however, of the *fœtus* and its putrefaction would be as necessary to success as its death.

*Lastly*. Suppose a patient with a very deformed pelvis to have arrived at the *full term* of utero-gestation, does this case suggest any new principles or modifications of treatment for the delivery of the mother? Under these circumstances our practice should be, in a great degree, regulated by the state of the child. If it be alive, and the pelvis is as small as in the present case, or even half an inch larger in its measurements, then I believe it is our duty to perform the Cæsarean section. But we will suppose the child to be dead. In this case most British accoucheurs

would attempt delivery by craniotomy, if the dimensions of the pelvis at all permitted it. And the present case seems to suggest one means of rendering it thus possible, under a degree of contraction in which the operation is at present regarded as totally inapplicable.

[The great obstacle to delivery by embryulcio arises from our want of means of reducing the size of the bones of the face and base of the skull, as, in the present case, was effected by nature. Dr. Simpson inquires whether some instrument might not be invented by which this could be accomplished, and thinks that some form of bone forceps might answer the purpose.]

ART. 88.—*Abdominal Tumour mistaken for Pregnancy.*

By JOHN CHALLICE, Esq.

(*Lancet*, Oct. 16, 1847.)

[The following case is one of great practical value, and displays forcibly the great difficulty which surrounds the diagnosis of pregnancy. It would, perhaps, be difficult to meet with an instance affording stronger circumstantial evidence of that condition.]

Mr. Challice received an urgent message to visit a young lady, said to be labouring under cholera, but from hints received from the maid-servant he was induced to suspect the possibility of pregnancy.

When he arrived he saw a young female in bed, lying on her right side, with her face buried in the pillow, and the knees drawn up towards the abdomen. She seemed to be in pain, but was sullen, and refused to answer any questions. The mother stated that she had been vomiting, and complaining of pains in the loins, with a constant desire to pass water, and that for the last five or six months she had observed a change in her daughter—the appetite capricious, temper irritable, and on several occasions she had been surprised in tears; notwithstanding, she denied being ill, and continued to perform her domestic duties. These facts seemed confirmatory of the servant's suspicions, and with almost a conviction in his mind of the condition of the girl, the author placed his hand upon the abdomen; it was tense and swollen, and a movement like that of a living fœtus was distinctly felt; he then listened and detected a loud and quick pulsation.

The presence of these symptoms induced him to pronounce the patient pregnant. No suspicion had entered the mother's mind; she was an only daughter, and bore an excellent character. However, she did not deny the fact, but after a distressing burst of grief, and a pitiable appeal for forgiveness, she confessed that her cousin had had connection with her once, and only once, about six months before, a few days previous to his departure from England. Being unwilling to aggravate her sufferings by what appeared unnecessary inquiries, or to disturb the patient by further and more careful examination, considering the case quite decisive, Mr. Challice contented himself with prescribing some simple remedy for relieving the sickness and pain. The next day there was a great improvement in the condition of the patient; the fear of discovery no longer agitated her, and she had been forgiven. Up to this period she had so contrived to compress her figure, that no increase in her bulk was perceptible when dressed, although her size was quite that of the sixth month of gestation when undressed. Now that this cruel mental and physical restraint no longer tormented her, she suffered less from pain and sickness, became less sullen, and more communicative.

It appears that the connection took place, after prolonged resistance, just previous to the usual period of menstruation; that up to that time there had never been the least irregularity of this function during the three years she had menstruated.

She was greatly alarmed at the absence of the accustomed appearances at the usual time, and did not feel well in health, although she had no marked symptoms; a general sense of uneasiness, with pains in the loins, and an occasional slight feeling of sickness and loss of appetite, were felt. When the next period came round, she was pleased at finding herself "unwell," but only to about half the usual extent; menstruation had continued regularly up to the time Mr. Challice saw her; on each occasion, however, more and more scantily. The abdomen had gone on gradually increasing in bulk, and about five months after the connec-



tion the patient was conscious of a movement and pulsation in the abdomen, and believed herself pregnant. The breasts were small, and marked with an indistinct areola; around the eyes and mouth there were dark circles, and her mother said she had much fallen away in flesh. Previous to this unfortunate occurrence, the patient not only enjoyed good health, but was remarkable for strength, endurance, and activity, inclined to *embonpoint*, full of life and spirits, and in her nineteenth year.

During the next month or six weeks Mr. Challice saw the patient occasionally. She complained of no urgent symptom, walked out now and then, had a good appetite and digestion, with sometimes slight irritability of the bladder, and irregularity of the bowels. The gradual increase in size still went on, and the mother (who now slept with her daughter) said that the movement of the child continued. The patient complained of its violence when in bed, and also began to suffer from lumbar pains and constant irritation of the labia, which was much increased when she drank beer, wine, or spirits. And so the case went on.

When the ninth calendar month had nearly expired since the connection, Mr. Challice became much interested in the case, thinking it one in which the period of gestation could be accurately ascertained.

On the evening of the expiration of the ninth month the author received the expected message, with an urgent request to hasten, as very strong labour had come on. When he arrived the patient was standing at the foot of the bed, grasping the bedpost, and evidently suffering from pain, although not of a violent character. There was an interval of about ten minutes in the pains, during which she walked about the room, having a very anxious and haggard look.

After a good deal of persuasion she consented to an examination *per vaginam*, which seemed to cause excessive pain, as she screamed violently, and exclaimed that she was being murdered. At the time, the author thought the patient hysterical, but was much surprised at the narrow constricted condition of the vagina, and the presence of the hymen nearly perfect; the agony, however, produced by the examination, seemed so intolerable, that the patient, by a sudden and violent effort, threw herself from him, declaring that he should torment her no more.

Finding that the pains were weak and ineffectual, and at longer intervals, and feeling assured, from the condition of the parts, that immediate labour was not at hand, the author gave twenty minims of opium, and left, directing a full dose of castor oil to be given in a few hours. During the night she slept well; the oil acted freely in the morning; and the next day passed over without pain or any inconvenience, the patient having a good appetite, and being better in spirits. About eleven o'clock at night the pains returned with increased violence, and he found her straining and heaving down at the bedpost. An old experienced nurse declared "that the pains were quite strong enough, with assistance, to bring the child into the world." The mother states, that during the night she had placed her hand on her daughter's stomach, and felt the child move vigorously.

In the intervals of pain the patient walked about the room, and was cheerful, except expressing what seemed to be an unreasonable horror at any examination. The pains commenced in the abdomen, and then extended round to the loins, came on regularly every ten or fifteen minutes, and were marked with all the characteristics of labour in its first stage.

The extreme excitement and dread which the patient evinced when the necessity for an examination was impressed upon her induced the author to waive it, although he was anxious to ascertain the real condition of affairs. It would be useless to detail the diurnal symptoms; suffice it that a week passed over, and matters remained apparently without alteration either one way or the other. I may here state that menstruation did not take place at this period. Doubts now first began to arise in the author's mind about the nature of the case; and, when nine calendar months from the departure of her cousin had expired he became very anxious about it. It was at this stage that Dr. Lever was consulted. After a careful and thorough external and internal examination, this gentleman, justly famous for his skill and tact in diagnosis, having the history of the case before him, came to the conclusion that it was "extra-uterine impregnation." At that time her physical condition was as follows:—Countenance pale, an anxious expression; eyes rather sunken; nose pinched; breasts somewhat flaccid; abdomen the size

of mature pregnancy, if not larger; pulse never less than 100: the tongue clean, but morbidly red; bowels sometimes costive for a day or two, at other times the reverse; urine most frequently pale and copious, but on some occasions thick, scanty, and high-coloured. Over the entire abdominal region a distinct pulsation could be heard and felt; but owing to the extreme excitability of the patient it was almost impossible to ascertain whether or not it was synchronous with the pulse. Palliative measures were adopted, and the case, now become one of painful interest, was closely watched. During the next fortnight no perceptible alteration occurred, except that the pulsation in the tumour became less distinct, and the abdomen more tense. Dr. Ferguson now visited the patient, and pronounced the abdominal pulsation to be synchronous with the heart's action, and doubted whether impregnation had taken place at all. On his recommendation the author punctured the abdomen with a fine "trochar," and drew off about five pints of thick grumous and offensive matter. Great relief followed the operation, only, however, temporary; for in the course of a short time the abdomen became as tense as before, and all the patient's sufferings returned. The interest, in a further detail of the symptoms of this case, here ceases, no doubt now being entertained of its character. After a second and a third tapping, the poor girl gradually got weaker and weaker, her only comfort the oblivion produced by anodynes; and on the 15th of February she died.

The day following, assisted by Mr. Druitt, a post-mortem examination was made. The upper portion of the body was extremely emaciated, but, owing to slight œdema of the lower extremities, this appearance was not general. Abdomen greatly distended, and marked by enlarged veins; it measured in circumference fifty-eight inches. About a gallon of fluid was drawn off by the trochar, previous to making a free incision, after which nearly a painful of brain-like matter rolled out. This had been contained in a cyst, which extended from the pubis to the ensiform cartilage, and from the left to the right hypochondrium; in some parts the walls of the sac were more than an inch thick, and of a fibro-cartilaginous consistence; the anterior portion adhered firmly to the abdominal parietes, the upper being formed by the inferior surface of the liver; that organ was bathed with the contents of the sac, and became inoculated, several small cysts, filled with medullary sarcoma, having formed in its substance. There were, also, many isolated cysts, varying from the size of a hazel nut to that of a pigeon's egg, formed in the walls of the cyst; these had no connection with each other, or communication with the general cavity. The uterus was found imbedded in the lower portion or base of the cyst; no trace of the ovaries could be met with; the bladder was small, but not affected by disease.

The peculiar interest of this case arises from the close resemblance to the symptoms of impregnation; the development of a malignant disease seeming, in a great measure, to be influenced by the feelings or instinct of the patient. The author asks, would the girl have died had no connection taken place? How far did the mental and physical excitement act upon the origin or the progress of the disease? Or was it completely independent, and its course inevitable?

[It is not improbable that the ovarian excitement, connected with the act of copulation, was the starting-point of the disease.]

ART. 89.—*Cases of Laceration of the Perineum, with their Treatment.* By JOHN METTAUER, M. D., Virginia.

(*Amer. Journ. of the Med. Sciences*, April 1847.)

[This accident, which occasionally occurs as a complication of delivery, when severe, is one of the most lamentable visitations to which the female is subjected. Though it does not materially shorten life, it renders life next to insupportable, and, therefore, the inquiry into the best manner of restoring the lacerated parts is one of as much interest as any which the obstetrical surgeon can expect to meet with. In the following cases we have a good exemplification of the ordinary course of these accidents, as well as well-devised operative proceedings for their relief.]

CASE I. This occurred in a lady 24 years of age, and resulted from the coarse and hurried manipulations of a midwife. An examination revealed a very extensive laceration. The recto-vaginal septum was destroyed to a distance of two

inches and a half, and the margins of the rent were completely cicatrized. No trace of the rectum or the sphincter ani could be recognised, and the power of retaining the fæces was therefore entirely lost.

From the mucous coat of the rectum a massive fungous growth protruded itself into the vagina, and the verge of the anus and labia externa were greatly excoriated. Before any operation was attempted, the patient was confined to a liquid diet, and the large intestines were emptied by genile purgatives.

In the operation the patient was placed on the back, in the lithotomy position, and the labias were held separate by curved spatulæ. The margins of the laceration were now readily exposed, bounded by a cicatrized line. The operator then commenced the denudations, taking care, however, that they did not extend beyond the cicatrized lines, by removing a belt of vaginal mucous membrane ten lines in breadth. The denudation was commenced at the verge of the recto-vaginal orifice. Bleeding was checked by repeated syringings with cold water. This step accomplished, the denuded surfaces were brought together by short needles, much curved, and armed with metallic ligatures, which were inserted deeply beneath the margins of the denuded surfaces, by means of needle forceps constructed for the occasion. By arming the needle first with a flaxen or silken ligature, and connected with the metallic one bent into a loop, no difficulty was experienced in introducing the latter. They were inserted from within outward, commencing at the angle of the laceration; when the parts were drawn into apposition, they were retained by twisting the ends of the ligature.

After carefully cleansing the parts by injecting cold water over them, and investing the whole of the twisted portions of the wires with oiled silk, to protect the mucous membrane of the vagina against them, the patient was placed in bed on her left side, and cold compresses were applied to the parts when they became hot and throbbing. The bowels were suffered to repose by withholding all kinds of solid food. On the third and fifth day the wires were tightened by twisting them from left to right. There was no action of the bowels till the seventh day, and the evacuation occurred without any displacement of the parts. On the twelfth day union had completely taken place, and the wires were cut and removed. There was no deformity, and the woman has since had two children without a recurrence of the accident.

CASE II. A lady, æt. 32. The accident occurred during her first labour, fourteen years since, and the laceration had increased during each of five subsequent deliveries, until it had extended the whole length of the recto-vaginal septum, fully five inches, and, as in the preceding case, the mucous lining of the rectum was greatly thickened, and exceedingly irritable.

The same preliminary steps were taken as in the preceding case, and the denudations were practised; but as there was no regular boundary indicated by the cicatrized edges of the laceration, the operator was obliged to assume one. Thirteen leaden sutures were inserted in the manner before described, and on the eighth day were cut away, as the parts appeared perfectly united. The operator, however, had scarcely left the house for two hours when he was summoned again, and with haste. On his arrival he discovered that an alvine discharge, of solid character, had found its way through the centre of the original cleft. An examination was immediately made, which soon enough disclosed the existence of the unwelcome opening. The fissure was about twenty lines in length. Every other part of the original fissure remained perfectly united, and looked quite natural, and firm as seen along the floor of the vagina.

The parts were well cleansed from fæces, and four sutures applied, first carefully removing the uneven margins and the mucous membrane a few lines exterior to them; the operator also formed fresh denudations near and beyond the vagino-rectal orifice, to enable him to remove off those parts, and as far as possible to restore the perineum, fourchette, and anus, which he was enabled to do by confining those denudations in contact with three additional sutures. The ligatures were tightened only once after their insertion. In fourteen days the ligatures were removed, and firm union found to have taken place in every part of the original, as well as of the accidental cleft. The perineum and fourchette were very perfectly restored, but there was a slight defect of the anus, the sphincter muscle seeming not to close the orifice so perfectly as to prevent the escape of very liquid



fecal matters in all cases. This case, nevertheless, was regarded by the lady as most triumphantly successful, as it permitted her once more to occupy the station of a wife and housekeeper, and in a very great degree to mingle freely in general society after her long partial seclusion from it.

The third, fourth, fifth, and sixth cases did not differ in any material points from the two which have been particularly detailed; and their treatment having been almost identical with that pursued in those cases, with the exception of the second, after the accidental reopening of the cleft, by the passage of indurated feces through it. They were all entirely relieved.

The seventh case was in some respects similar to the second, inasmuch as it occurred partially with the first labour, and was extended somewhat at each succeeding parturition, until, finally, its extent was fully two inches and a half. The recto-vaginal wall was entirely destroyed, and complete incontinence was entailed on the sphincter ani muscle. This case had existed in all about twelve years, during which time the lady's health suffered much, and the irregularities were such as distinguished the two cases already detailed.

The operation was performed as already described and seemed likely to succeed perfectly. The sutures were removed on the twelfth day after their insertion, and every part of the line of the fissure had healed, except a very small orifice just within the sphincter muscle, through which flatus and liquid feces occasionally escaped. The lady would not be induced to submit to an operation for closing this small opening. Some weeks after leaving her, Dr. Mettauer was again requested to visit her in haste. He found on his arrival that the rectum and vagina were again united by a fissure, extending from this orifice through the wall, and was informed by the lady that it was caused by the passage of a large indurated mass of feces, causing very intense suffering. The laceration, however, has contracted sufficiently to restore the retaining power partially, and thus enables the lady to appear in company, when her bowels are not in a disordered state. This lady has frequently determined to have the operation repeated; but as yet it has not been done. In its present condition the case could be easily relieved.

[In conclusion, Dr. Mettauer states his belief that all cases of this allicting accident are remediable, and expresses his preference of the metallic over silk sutures.]

ART. 90.—*Galvanism in Atony of the Uterus during Labour.*—[The following instructive case is related by Dr. Golding Bird, in his "Lectures on Electricity and Galvanism." The case occurred in the practice of Mr. Cleveland, whose words we extract.

I was requested to see Mrs. C., æt. 35, in her sixteenth confinement. On my arrival I learned that her previous labours had been tolerably good, with two or three exceptions, when they had been considerably protracted from want of pains. On the Sunday prior to my visit she had been attacked with the premonitory signs of labour, soon succeeded by regular and frequent pains, which on the following morning abated, but never entirely abated until the Wednesday night when the liquor amnii was discharged.

At 1 A. M., on Friday, the pains returned with considerable vigour, but did not last above an hour, and at 6 A. M. they were again renewed for a short period. The surgeon in attendance had exhibited ergot and some spirit and water, but these measures were followed only by a few ineffectual pains.

Having ascertained by examination *per vaginam* that there was no obstacle to the termination of the case, but a want of contraction of the uterus, and believing it desirable, as symptoms of exhaustion were manifest, that no time should be lost, I was soon provided with an efficient electro-galvanic apparatus, and resolved on a trial of electricity.

I was soon gratified in finding, after a few applications externally across the anterior surface of the uterus, that a very decided effect was produced. Regular, strong, and frequent pains came on, and, in the course of a quarter of an hour, a living child and placenta were expelled with less hemorrhage than I ever witnessed. The uterus immediately contracted firmly.

*Medical Gazette, June 11, 1847.*

ART. 91.—*On Funis Presentations.* By JAMES STEPHENS, Esq.*(Lancet, Aug. 21, 1847.)*

The author remarks, that the fatal result, as regards the life of the child, so frequently observed when the cord descends during labour, renders it very desirable to attempt some different modes of treatment than those at present adopted by practitioners, and thus endeavour to lessen the excessive mortality shown in the records of the profession.

Dr. Churchill, in his excellent Manual, has collected the number of 355 cases, in 220 of which the child was lost, "being a larger mortality than we find in any other order of practical labour." From the same sources he proves that the cord is prolapsed in about every 245 labours; if, then, we take into consideration the numbers occurring on the face of the earth, what an immense amount of human life is lost annually.

All the plans hitherto proposed to return the cord into the uterus are admitted to be imperfect and unsafe, and for the most part unsuccessful. In the whole of the processes recommended, the vessels of the cord are more or less subjected to compression or strangulation.

Dr. Robert Lee, in his valuable Lectures, published in 1844, at page 352, makes the following observation: "I regret being obliged unreservedly to acknowledge, that no generally successful plan of treatment has yet been discovered for prolapsus of the cord."

And again, a few lines below, he says, "If he could by any means contrive to effect a reduction of the portion of prolapsed cord, or push it back again into the uterus, above the head, and retain it there till the head had passed through the os uteri, or completely distended it, or if we could by any means hasten the delivery, the danger to which the child is exposed would evidently be averted."

The operation of turning and delivery by the feet can only be performed successfully under the most favourable circumstances, as when the os uteri is dilated or very dilatable; the liquor amnii only recently discharged; before the head has entered the pelvis; the soft parts must also be favourable, or the child will die before the delivery can be effected. It is endangered from the increased pressure produced in the very act of turning and forcible delivery.

The extraction of the child by the forceps can only be resorted to in a more advanced stage of the labour: it undoubtedly is good practice when the head of the child occupies the cavity of the pelvis before the arrival of the surgeon; but to be successful and safe, the perineum must be yielding, a state we rarely observe in first labours; the delivery must be effected very quickly, or the child will perish. In those few cases where the natural powers may be trusted, the pelvis must be roomy or the child small, the pains following each other rapidly, or be very long between, to allow the child to revive after each uterine paroxysm; but it is proved that in the majority of instances the child is stillborn.

The author has contrived an instrument for the purpose of carrying the cord back into the uterus, which consists of a small forceps fixed to a strong wire passing through a gum-elastic tube fourteen inches in length, about the size of a common No. 8 male catheter; the apex is tipped with a small metallic ring to prevent it splitting. When the wire is drawn down, the blades of the forceps close by being compressed in the aperture of the ring at the apex of the tube, and it is satisfactory to see how firmly it takes hold of anything to which it is applied. The lower end of the wire is screw-like, and has a small metallic nut placed upon it, which can be screwed up to the ivory handle, by which means the grasp of the forceps is firmly maintained.

It is important to attend to this, because the slightest movement of the stilet might raise the forceps, allow the blades to separate, and release the cord. The tube is slightly curved at the upper end, to facilitate its being passed round the head of the child. Its flexibility will admit of any variation of curve which may be deemed necessary.

The grasp of the forceps can be released in a moment by unscrewing the nut of the wire a little, and passing it upwards, when the blades immediately separate.

The small size of the instrument renders its introduction easy, and it can be as easily withdrawn, after having carried the cord into the uterus.

The important principle of the instrument consists in only taking hold of a small portion of the coverings of the cord, leaving the vessels untouched; indeed, the blades never separate wide enough to admit the whole substance of the funis—an accident which would certainly destroy the child.

The instrument is so simple and harmless, that no danger can result from its use; and from the small size there is little fear of the cord following during the withdrawal, which might occur if a larger one was employed, as frequently happens when the fingers are used. It can be applied at any time after the descent of the cord, whatever may be the state of the os uteri, and thus will be successful in those cases where turning or the forceps is totally out of the question; for it would be extremely hazardous to forcibly dilate an unyielding os uteri, or to make violent efforts to turn when the liquor amnii has been long evacuated, and the uterus is strongly contracted upon the body of the child. The probability is the child would be lost, and the operation certainly exposes the mother to the danger of laceration, inflammation, &c. If the cord is examined when prolapsed, it will be found very tense, especially during the uterine contraction; the external circumference is rounded and firm, from the congested state of the umbilical vein, nor could it be easily seized by the instrument at that part; but on the inner circle of the loop the coverings are flaccid, and can be readily taken hold of by the minute blades of the forceps.

[As some difficulty may be experienced in fixing the instrument while the cord is in the vagina, the author recommends that the loop be drawn out, and the instrument applied during the absence of a pain. He states that a portion of the coverings only is to be seized, and that the vessels of the cord, for obvious reasons, are not to be included in the grasp. The cord is then to be carried through the os uteri, round the head of the child. If a pain should come on, the operator should wait till it has ceased. Once reduced, the cord should be held back during the next pain, when it is probable that the presenting part will have advanced sufficiently to preserve the cord descending again. The forceps may then be detached by pushing up the stilet. The above proceeding will, we think, be found more easy on paper than in practice, but it is nevertheless worthy of the attention of accoucheurs.]

ART. 92.—*Influence of Periods of the Day on Births.*—Dr. Casper has ascertained—

1st. That the greatest number of births occur between nine o'clock in the evening and six in the morning; while the smallest number occur between nine in the morning and six in the evening.

2d. The pains of labour commence most frequently between twelve at night and three in the morning, but frequently between six and nine in the morning.

3d. The influence of night is more marked with respect to the commencement of labour than with respect to complete delivery.

4th. Among those births in which the pains commenced by day, the greater number were male children, and vice versa.

5th. On an average the delivery was more protracted when the pains commenced by day than by night.

6th. The preponderance of nocturnal over diurnal births is more striking in respect to children born dead than to those born alive.

*Brit. and For. Med. Rev., July 1847.*

ART. 93.—*On Inversion of the Uterus.*

By JOHN GREEN CROSSE, Esq., Senior Surgeon to the Norfolk and Norwich Hospital.

(Continued from Vol. V. p. 154.)

[We purpose in the present article to give an abstract of what the author justly considers the most important point connected with the subject, viz. the diagnosis.

*Diagnosis of recent inversion of the womb.*—The author remarks that the short an dogmatic rules laid down by writers would lead to the supposition that the diagnosis of the inverted womb is very easy; but that actual experience proves the con-



trary, even in reference to inversion post-partem, which has been mistaken for the head of another child—for another placenta—for a mole, excrescence, or polypus, and even for still more unlikely diseases or displacements. These mistakes have been made not only by midwives, but by well-educated and practised surgeons.

In the slightest degree of recent inversion there would be nothing more than hemorrhage to indicate what has happened, until by examination above the pubes, a cup-like depression of the fundus is detected. No further fact-evidence than this can be obtained until the fœtus be delivered, or even then, if the placenta be still partially within the uterus. As soon as the placenta is away, if *depressio* be suspected [and, according to the author, such suspicion is warrantable whenever copious hemorrhage continues], the hand should be introduced into the uterine cavity, when a prominence re-sembling a piece of sponge, convex, and more or less yielding, will be felt. This, with the cup-like depression detected externally above the pubis, is characteristic of simple *depressio*.

In *introversio*, examination when the placenta is away discovers the lower half of the uterus filled with a convex tumour formed by the inverted upper half of the organ. If the uterus do not grasp the inverted portion, the hand may be passed between the two, and the tumour will be perceived to have a large base. It is symmetrical, with a surface identical with the rest of the lining membrane of the uterus. It is elastic, yielding to pressure, and recovering itself; it is more or less painful to the touch: it is equal in size to the fist, and feels jagged, and as if covered with coagulated blood. Whenever, after delivery, these facts are ascertained, conjointly with a depression or hollow above the pubis, *introversio* is present.

In *perversio*, the inverted portion occupies the vagina, and the finger may be made to encircle it; and the depth of the inverted portion can be ascertained by the uterine sound, and is the same all round. When, in this last degree, the inversion may so fill the vagina, and the cervix be so high that it cannot be reached with the finger, a judgment must then be formed by external examination above the pubis, where the absence of the uterus will give satisfactory evidence. It cannot, however, observes the author, be too strongly pointed out that the uterus, when inverted to this degree, may rise so far above the pubes, and present so large and firm a tumour as to lead to the conviction that the contracted uterus has been felt *in situ*. Several undoubted instances of such an oversight are on record. The tumour in the vagina in *perversio* may be suspected, and will be found to be of a florid colour, with a vascular velvety surface, which bleeds on the slightest touch. If the part presenting be that to which the placenta was attached, it will be uneven, of a dark hue, with placental shreds or coagula adhering to it.

When the inversion is total, although not prolapsed, the diagnosis is not difficult. The tumour fills the vagina, and terminates in a cul-de-sac around the neck or highest part of the tumour, without any lip or aperture. The uterus under these circumstances occurring immediately after delivery, and still retained within the vulva, rises above the pubes, and allows the circle formed by the contracted cervix to be felt externally. Sometimes the contraction of the cervix is so great as to cause the surgeon to imagine that the tumour is the uterus *in situ*, but the constitutional symptoms will, in the author's opinion, sufficiently indicate the true state of the case.

When prolapsed externally (after labour) the inverted uterus can never be mistaken but from inattention, and, says the author, it is well it is so, as the minute rules of investigation are inapplicable, for the patient may be lost while the surgeon is studying to apply them. He must be satisfied with finding the uterus absent from the abdomen, while a tumour is depending from the vagina, and the patient exhibiting the condition of "shock," pulseless and prostrated. When the vagina is also inverted, the author deems a mistake by a surgeon impossible.

[This concludes what the author has to say of the general diagnosis of inverted uterus, and he now proceeds to lay down rules for the differential diagnosis between this accident and other conditions for which it may be mistaken. He puts aside the mistakes for fetal head, or breech, nates, &c., as unlikely, and proceeds at once to the question of diagnosis of inverted uterus and polypus. The author, in limine, remarks upon the fact that polypi may precede pregnancy and

complicate delivery, but does not consider the occurrence as more frequent than that of inversion, wherefore he does not admit the excuse which might be urged under the instance of an error, that the mind of the accoucheur was occupied with the idea of polypus. Certainly, if what the author states is true, it ought not to be. However—]

Polypus is not attended by collapse, which so generally attends inversion. Polypus does not diminish under pressure; an inverted uterus pressed upon disappears, and the patient is relieved. A vesicular polypus having a narrow neck, cannot readily be mistaken. The fibrous polypus, although it has a broad base, differs in being nodulated and inelastic. The uterine sound, in polypus, will pass several inches within the uterine cavity in certain directions, being impeded only on the side to which the growth is attached. In inversion it is impeded at the same and a less depth all around.

*Chronic inversion, diagnosis of.*—Although recent inversion post-partem has been so often misunderstood, arising, the author thinks, from the necessity of rapid decision, it is in the chronic state that the difficulty of recognizing the real nature of the affection becomes the most palpable.

The minor degrees of inversion are rarely met with in the chronic state; the author's remarks are, therefore, confined to *perversio* and total inversion. The latter is the least common. It presents a pyramidal tumour scarcely equaling in size the healthy uterus, the neck presenting an indurated ring just at the point at which the vagina is reflected. The absence of any aperture, fold, or irregularity, distinguishes total inversion from partial, as well as from polypus. The only possibility of error under these circumstances, arises from a very rare complication, referred to by the author, in which a polypous tumour, originating in the os uteri, obliterates that orifice, and causes in its descent more or less complete atrophy of the uterus, itself assuming the shape of the inverted organ. An instance of this obscurity is referred to by the author, and illustrated by engravings.

By its more frequent occurrence, chronic uterine inversion in the form of *perversio extrema*, claims the longest notice. In forming the diagnosis of this form of the accident, the author states that the historical evidence should be, in the first place, carefully made out. Ocular information by the speculum should also be obtained, but the greatest variety of information is to be formed by the *touch*. The smooth velvety covering, and the uniform outline of the tumour, are recognized by the finger, as well as its size; and it is to be recollected, that in cases where there has been no diseased action set up, the inverted organ may scarcely equal the healthy uterus in size, and is flattened anteriorly and posteriorly. The largest part of the tumour is the lowest. Sometimes the finger may pass through the uninverted cervix, and in all cases the elastic bougie may be used and formed to pass an equal depth (seldom more than half an inch) all round. Examination per anum discovers the absence of the uterus from its usual situation. This fact may be also further confirmed by passing a male catheter into the bladder, and directing its extremity backwards, so that it is felt by the finger in the rectum, or by pressing it downwards and backwards, as suggested by M. Malgaigne, so that carrying the coats of the bladder before it, it may enter the peritoneal cul-de-sac formed by the inversion, and become evident to the finger in the vagina. Such evidence, observes the author, would be decisive, but, as far as his knowledge goes, no surgeon has pronounced favorably upon the proposal from his own experience.

The remaining portion of this section is occupied with the differential diagnosis of chronic *perversio* and polypus occupying the vagina, which are the two maladies which have been most frequently confounded together, or reciprocally mistaken the one for the other. Some information may be derived from the size of the tumour; chronic inversion presents a tumour not larger than the healthy uterus: one, therefore, of large size, indicates a polypus. Variation in size is also important. The inverted uterus varies little in size, and never exhibits such an increase as is seen in polypus. If, therefore, growth be ascertained, it is polypus.

As to sensibility of the tumour, it may be stated generally that an inversion is more or less sensitive, and a polypus not so; though the latter may be sensible of the fibrous character, and enveloped in a layer of uterine tissue. The inverted uterus when chronic is always hard and dense in structure; but polypi may vary

much in texture, some being soft and light, as the vesicular form, others heavy, hard, and nodulated.

Ocular evidence of oozing of the menstrual fluid from the surface of the tumour may be considered as pathognomonic.

Inversion of the womb produced and accompanied by polypus, cannot happen as long as the polypus remains wholly in utero, but if the os uteri be dilated, and the polypus partly or chiefly propelled into the vagina, *depressio* or *introversio* may be the result. In this case, in addition to the signs afforded by examination per rectum and over the pubes, if the finger can be passed into the uterus above the polypus, the union of this body with the inverted fundus will be perceived, giving the sensation of two cones united, as in the hour-glass shape. The insensibility of the polypus up to a certain point, and the commencing sensibility of the superior cone, will also materially assist in the diagnosis.

[We shall continue this Essay as soon as the remainder is published.]

*Trans. Prov. Med. and Surg. Association, Vol. iii. New Series.*

ART. 94.—*Inversion of the Uterus successfully treated.* By E. H. M'Coy, M. D., of Harrisville, Ohio. (Western Journ. of Med. and Surg., Jan. 1847.)—The subject of this case was 21 years of age, and had been delivered by a midwife. When seen, two days afterwards, by Dr. M'Coy, her respiration was diaphragmatic; skin hot and dry; pulse, small, wiry, incompressible, and beating 115 in the minute; mouth dry; tongue covered with a dark-brown fur. She had extreme abdominal tenderness, the lochia was suppressed, and she experienced continued bearing-down pains. On examination per vaginam, he found the uterus inverted, and the vagina reflected in the form of a ring around the pedicle of the tumour. He introduced his hand in a conical form, indented the apex of the tumour, and gradually but perseveringly carried it up through the os uteri, entirely relieving the expulsive after-pains. He ordered an infusion of chamomile flowers to be thrown into the vagina every two hours, together with fomentations of hops to the abdomen, and a powder containing v grs. pulv. antimonialis, ij grs. calomel, and  $\frac{3}{4}$  gr. opium; one to be taken every two hours. On his second visit, eighteen hours after reducing the inverted womb, he found a decided improvement in all the symptoms; the powders had acted freely on the bowels, bringing away copious, dark, bilious dejections; the abdominal tenderness was subsiding; the lochia had returned; the pulse had fallen to ninety, and was soft and full; the skin was relaxed and moist, and the secretion of milk was established. The patient speedily recovered.

*Amer. Journ. of the Med. Sciences, July 1847.*

## SECT. II.—DISEASES OF CHILDREN.

ART. 95.—*On Simple Acute Inflammation of the Brain in Infants.*

By M. RILLIET.

(*Archives Générales de Méd., 1847.*)

[The author's object, in the following important Essay, is to point out the nature, symptoms, and treatment of acute inflammation of the brain as distinguished from the tubercular form of the complaint, which is the more common disease known as acute hydrocephalus. Our space will not allow of our giving the historical notices of the disease which the author has minutely detailed: for these the reader is referred to the original, or to the "Provincial Medical and Surgical Journal" of the present year (p. 151), where our translation of the Essay is to be found. The characteristic morbid appearances of the disease in question are always to be found in the convexity of the brain, or in the ventricles which are inflamed and infiltrated; and it is rare to find tubercles either in the brain or other organs. In the tuberculous form, on the other hand, the diseased products are always accumulated at the base of the brain, and tubercles or granulations are always present either in the pia mater or in other organs of the body, or, as is more commonly the case, in both. So constantly is this fact observed, that the author upon it alone



establishes a diagnosis between the two forms, as will be seen in a future part of the Essay. The morbid anatomy of the simple form is thus given:]

**MORBID ANATOMY.**—Great familiarity with pathological anatomy is necessary for the appreciation of the slight lesions which frequently constitute the morbid appearances left by tubercular meningitis; but it is far more easy to recognize the results of true meningitis of the convexity. Scarcely, in fact, is the injected dura mater divided, than a greater or less extent of the convexity of the two hemispheres is seen to be covered with a layer of yellow or yellowish-green exudation. The deposit also extends to the internal aspect of the hemispheres, the upper surface of the cerebellum, and sometimes to the base of the brain. A slight examination is sufficient to demonstrate that the deposit consists of liquid pus, and that its seat is always the pia mater, and sometimes also the arachnoid cavity. The products of inflammation deserve to be separately studied in these two situations.

1st. *In the arachnoid.*—This membrane, although it contains the products of inflammation, may itself not exhibit any trace of that process; but in general retains its smooth and polished appearance. If life has been prolonged to the sixth or seventh day, the pus loses its fluidity, and acquires such consistence as to resemble a false membrane; in other cases true false membranes are formed in addition to the fluid products. These partake of the yellow colour of the pus,—are thin, soft, and seldom very extensive: they are always easily detached from the serous membrane, unless, as is occasionally seen, organization has commenced.

2d. *Pia mater.*—Alterations similar to the above are discovered also in the pia mater, especially in patients who have died on the fourth or fifth day. The pus, when liquid, may be made to pass over the surface of the membrane by pressure with the finger, but it subsequently becomes concrete, forming a flat, broad layer of variable thickness, and which passes down into the sulci. The membrane appears to be puffed up by the secretion, and is increased both in thickness and tenacity. The deposit of pus is always more copious along the sides of the blood-vessels, and in the interstices of the convolutions, than elsewhere. At the base the pia mater is often quite healthy. Over the surface occupied by the pus the membrane is finely injected, and is readily detached from the surface of the brain.

3d. *Cerebral substance.*—The brain is firm, sometimes preternaturally so. The gray substance is of a normal colour if death has occurred before the fifth day; later it may also be nearly unaltered, but it is more generally of a vivid rose colour, and the medullary portion exhibits numerous bloody points. The most superficial layer of the convolutions is sometimes softened, so that portions of it are removed along with the pia mater. In very young infants the brain is sometimes softened throughout, an appearance which is probably due to œdema of its tissues. The condition of the brain in subjects who have speedily succumbed, shows plainly that inflammation of the membranes is the initiatory lesion, and the cerebral pulp becomes involved subsequently.

4th. *Ventricles.*—As a general rule, the ventricles are found empty, or containing only a teaspoonful or two of purulent serosity. The exception to this occurs in very young infants. In some cases the lining membrane and the plexus choroides exhibit traces of inflammation, being injected and softened, or subsequently pale, but thickened and opaque. The central portions of the brain in some cases preserve their consistence; in others they are softened, or converted into a diffuent pulp. The latter case chiefly occurs in young infants, in connection with copious serous effusion into the ventricles: but it is occasionally seen without this, and must then be attributed to inflammatory action, and not to maceration, as may be the case when the effusion is in large quantity.

To recapitulate:—The anatomical characters vary according to,—1st, the duration of the malady; 2d, the age of the patient: 3d, the seat of the inflammation.

1st. In cases which prove fatal before the fifth day, we find the pus fluid or semi-fluid, or false membranes in the arachnoid and pia mater, the latter being vividly injected, but not adherent to the surface of the brain. Later we in general discover only concrete pus or false membranes; the pia mater is less injected, and the surface of the convolutions is sometimes soft and reddened. In some in-

stances, the ventricular portion of the arachnoid is inflamed, and the cavity contains a small quantity of purulent serosity, but never pure serum.

2d. In very young infants the brain is often softened universally; the ventricles contain a large quantity of serosity, and there is also occasionally a subarachnoid serous effusion.

3d. General meningitis is the most common form of the disease; next, meningitis of the convexity; that of the base and ventricles is much more rare.

*Spinal marrow.*—The inflammation sometimes extends from the membranes of the brain to those of the spinal cord. It is to be regretted, however, that in the cases of autopsy which we have at our disposal, the examination of this part has been exceptional. [The author refers the reader for information on this point, to his "Traité des Maladies des Enfants," t. i. p. 697.]

*Thoracic and abdominal organs.*—The most important fact which is elicited by the examination of these organs in cases of true meningitis is, that tubercles are never met with, although they are universally present in meningitis of the base. Thus, in seventeen autopsies, they were not once met with. We therefore consider it justifiable to propound the pathological law,—*that general meningitis and meningitis of the convexity attack only non-tuberculous subjects; whilst inflammation of the base, without coincident affection of the membrane of the ventricles, is exclusively a disease of the tuberculous habit.* This law is at least true in the majority of cases; the exceptions are those in which the inflammation arises from external injury; but in spontaneous inflammation the law holds good.

*SYMPTOMS.*—*Headache* is a constant and early symptom in children above the age of two or three years; below that age it is often absent, especially in the secondary forms of the disease. This symptom either sets in simultaneously with the fever and vomiting, or precedes these by a day or two. It is confined to the forehead and is of great intensity, much greater than in either typhoid fever or the tubercular form of the disease; its duration is variable, but seldom goes beyond the third day.

*Intelligence.*—Disturbance of the intelligence is also an early symptom, and is never wanting whether the inflammation be primary or secondary, or at any age. In children of four and five, disorder of the mental faculties precedes the lesions of motility; the reverse is the case with young infants. The mental disturbance is usually first manifested in anxiety and inquietude. The child cannot rest, but changes its position unceasingly. It either refuses to answer questions altogether, or its replies are short and peevish. Subsequently violent delirium ensues. In some cases, chiefly young infants, somnolence or coma precedes the agitation, but most commonly the coma follows the delirium, or alternates with it. As the disease progresses, the torpor predominates.

*Disorders of motility.*—The most common of this group of symptoms are convulsions. In young infants they are frequently the earliest in the series, and are then severe and repeated. In six infants of from four months to two years of age—in three, convulsions were the first symptoms; in two, they appeared at a later period; in one, six days before death. In older children convulsions are seldom observed at the commencement, but are commonly witnessed two or three days before death, or are the immediate precursors of dissolution. They are more commonly partial than general, and are not so uninterrupted in their succession as in younger subjects.

Other disorders of the motor functions replace convulsions when these are absent, or succeed to them when they disappear. Thus, in some cases, rigidity of the limbs is noticed during the first or second day; in others, a more or less perfect hemiplegia occurs. Some of these phenomena, such as rigidity of the trunk, with drawing backward of the head, are probably to be referred to an extension of the inflammation in the membranes of the cord.

*Organs of sense.*—Intolerance of light and noise exists from the commencement. At a more advanced stage, there are strabismus and contracted pupil; still later the pupil is largely dilated and insensible.

*Countenance.*—In the commencement of the disease, the face is alternately flushed and pale; it then bears an expression of haggard anxiety, or of dullness and stupidity. The child appears to fix its gaze for a few moments upon some object, and then relapses into a vacant stare.

*Circulation.*—There is always more or less febrile disturbance: the pulse is quick and the surface hot. Occasionally there is an appearance of remittance in the fever, with concomitant variation in the pulse. In general, a fluctuation in the pulse is a constant symptom. [The author admits that he wants more information on the characters of the pulse in the cerebral diseases of children. He might have found much that he requires in English works on these affections, especially in those of Cheyne and Abercrombie.]

*Respiration.*—The respiration is generally irregular, and sighing. In some cases it is very rapid.

*Digestion.*—It is seldom that vomiting is absent in primary meningitis of children above the age of four years. This symptom generally appears on the first or second day, and is spontaneous and frequent. In some cases it continues without respite till the close of the disease. In younger children, and in some cases of secondary meningitis, vomiting is absent. Constipation is a common symptom, but it is neither so common nor so obstinate as in the tubercular form of the disease. As death approaches the belly becomes retracted.

GENERAL DESCRIPTION OF THE DISEASE.—*Form, duration, termination.*—Acute meningitis declares itself under two forms, to one of which we give the name of "convulsive," the other "phrenitic." We do not, however, wish it to be understood either that convulsions are never present excepting in the "convulsive" form, or that the "phrenitic" is the form exclusively characterized by perversions of the intelligence; we merely wish to notify by these terms the predominance of certain symptoms.

The *convulsive form* is most commonly seen in very young infants. It commences suddenly by an attack of convulsions, general or partial, with more or less febrile disturbance. There is neither vomiting nor constipation. When the convulsions, which are repeated at brief intervals, subside, the infant is left either in a state of agitation, or profoundly comatose, with squinting, and sometimes perfect hemiplegia. In certain cases there is an approach to sensibility between the fits, but the amendment is but momentary, and death rapidly approaches, either by coma, or during a subsequent paroxysm. The convulsive form of meningitis sometimes sets in more slowly, and the convulsions are not so closely approximated. The duration of this latter variety is longer, being from a week to a fortnight.

*Phrenitic meningitis* is commonly observed in early childhood, and in many respects resembles the acute meningitis of the adult. It commences with fever preceded by a rigor; violent headache ensues, with photophobia, vomiting, and sometimes constipation. The intellect suffers by the end of the first or second day, and the face assumes the peculiar wild look of the disease. Agitation and stupor alternate, and delirium is generally present. Subsequently there are grinding of the teeth, partial convulsions, rigidity of the limbs, a drawing of the head backwards, strabismus, and contraction followed by dilatation of the pupils. About the seventh or eighth day some of these symptoms subside; the vomiting ceases; but the fever still continues; the pulse and respiration are irregular; the belly is retracted, and finally partial convulsions ensue, followed by coma and death.

*Diagnosis.*—The diseases which are apt to be confounded with acute meningitis, are, as may be imagined, numerous. Before we mention these diseases, we shall enumerate those symptoms of the convulsive and phrenitic forms which are most worthy of confidence in a diagnostic point of view.

In the convulsive form we should attach great importance:—1. To the constant repetition of convulsions at short intervals. 2. To the acceleration of the respiration, which cannot be accounted for by any pulmonary lesion. 3. To the absence of all visceral inflammation, and of any indication of an exanthematic eruption. In the phrenitic form, the cardinal symptoms are—intense headache, accompanied by frequent bilious vomiting and constipation, followed by delirium and agitation, alternating with stupor.

*Differential diagnosis of the convulsive form.*—Convulsions in early infancy are very frequently symptomatic; but in this case they are seldom violent or so frequently repeated. Moreover, in the interval, the little patient recovers his sensibility, the respiration is not permanently accelerated, and the pulse quickly regains



its normal standard. It must, however, be admitted that in many cases the diagnosis can only be established by the progress of the disease.

The distinction between convulsive meningitis, and other cerebral affections, is still more obscure, and indeed it is often impossible. The error is not, however, one of importance, as the treatment, and too often the termination, of all are the same.

The first disease which we shall endeavour to distinguish is *hydrocephalus*, with *infiltration of the pia mater*, the *Wasserschlag* of Gölis.

In certain cases this condition complicates inflammatory meningitis, and the main features of each are then undistinguishable. In other cases the "hydro-meningitis" is the principal lesion, and we find only slight traces of purulent effusion. This disease, like the one from which we wish to distinguish it, also attacks very young infants; it sets in with fever, and a violent attack of convulsions, or with agitation and stupor, with transient and fallacious signs of amelioration. The analogy between the disease and the convulsive form of meningitis is therefore perfect.

In *hemorrhage into the arachnoid*, we observe repeated convulsions as the earliest symptoms, but they are in general less violent than in meningitis, and the coma does not ensue so rapidly. According to M. Legendre, children attacked with meningeal apoplexy, exhibit contractions of the fingers and toes—a symptom which is not observed in meningitis; while, on the other hand, the excitement of the pulse and circulation which is witnessed in the latter disease, is not seen in meningeal apoplexy. *Hemorrhage into the pia mater* also in some respects resembles convulsive meningitis, but it is a lesion of such rare occurrence that it need scarcely enter into our consideration.

These remarks conclude what we have to say respecting the diagnosis of convulsive meningitis from other organic lesions of the brain; but we must remember that the most important part of the diagnosis of the disease consists in its distinction from essential or symptomatic convulsions, since the treatment of the two forms of convulsion is obviously different.

What we have said in connection with "convulsive meningitis," applies equally to the phrenitic form. Cerebral hemorrhage, encephalitis, &c., may be confounded with it without any great damage; but it is not so with regard to cerebral congestion, tubercular meningitis, and those sympathetic affections of the brain which arise during the course of the eruptive or typhoid fevers. The following paragraph deserves the earnest attention of our readers:

*Cerebral congestion*.—We have often propounded to ourselves the following question:—Ought we to consider those violent cerebral attacks, which either quickly prove fatal, or as rapidly subside, and the symptoms of which are precisely those which indicate the onset of acute meningitis, as real instances of that disease? Post-mortem examination in these cases discovers neither pus nor false membranes, but only simple congestion. Is this congestion to be regarded as the initiative stage of inflammation? The question is difficult of solution; but we nevertheless consider that it should be answered in the negative, and for these reasons:—Inflammatory products of the brain form with such rapidity, that its whole surface may be covered with false membranes in a few hours, consequently the cases we have just mentioned ought to be distinguished from meningitis, both anatomically and by their symptoms. The diagnosis may, however, be here plainly established by the following comparative table:

#### *Cerebral Congestion*

Declares itself by sudden stupor, or more complete insensibility, with dilatation of the pupils; or its first symptoms are acute delirium, with difficult respiration, quick small pulse, and slight convulsions. These symptoms appear almost instantaneously. Vomiting is for the most part absent.

#### *Meningitis.*

In the phrenitic form, the first symptom is partial or general headache. Delirium does not appear in general until the lapse of twenty-four or thirty-six hours. Vomiting is generally present.

*Cerebral hemorrhage*.—In some cases cerebral hemorrhage closely simulates acute meningitis. Headache, convulsions, delirium, vomiting, and constipation

mark the onset of both diseases, and it is, therefore, difficult to decide, with certainty, which disease is present. The best guide to a correct conclusion is the high febrile excitement which characterizes meningeal inflammation.

*Tubercular meningitis.*—We now arrive at the most important portion of this essay, and shall endeavour to point out the main distinction between simple and tubercular meningitis. For clearness' sake we would remind the reader of four circumstances:—1. That the diagnosis is to be drawn from the ensemble of symptoms, and not from the individual characters of a disease. 2. The main element in forming our diagnosis is the consideration of the point of time at which the disturbances of the intellect and motility originate. 3. That the invasion of tubercular meningitis may take place under three different states of the system.—1st, after a longer or shorter duration of precursory symptoms; 2d, during the progress of tubercular disease in other organs; 3d, in perfect health. 4. That the first and third species are readily distinguished from acute simple meningitis; the error is more likely to be made between the latter and the second form. These preliminaries established, we shall proceed to lay down a brief summary of the differential symptoms as below :

#### *Simple Meningitis.*

1. The children attacked are, in general, vigorous and well developed, and do not exhibit any signs of tubercle. Their relations, too, are healthy.

2. The disease may appear as an epidemic.

3. *Prior condition.*—The attack takes place during robust health, or, if it is secondary, it follows some palpable external cause, or arises in the course of a non-tubercular malady.

4. *Mode of attack.*—Violent convulsions, intense fever, quick respiration if the infant is very young; or headache, fever, bilious vomiting. After a lapse of twenty-four hours, excessive agitation, delirium, and prostration.

5. *Symptoms.*—Headache intense, vomiting incessant, fever high, delirium fierce, constipation moderate.

6. *Progress.*—Rapid; convulsions incessant.

7. *Duration.*—Death in 24 hours, in some cases; but generally at the end of the third day.

#### *Tubercular Meningitis.*

1. The subjects of tubercular meningitis are delicate, and often precocious children. They are subject to glandular enlargements, and chronic eruptions of the skin. Their blood-relatives generally bear the stamp of the strumous diathesis.

2. The disease is always sporadic.

3. *Prior condition.*—The infant is observed to pine away and lose its flesh and strength. The disposition is altered, the appetite fails, and the *primæ viæ* become deranged.

4. *Mode of attack.*—Convulsions never the first symptoms; the transition from the first to the second period of the disease insensible; the coming on of the second stage marked by headache, vomiting and constipation; the intelligence sometimes unaffected. When the precursory symptoms are absent, the disease is ushered in by vomiting, moderate headache, and fever.

5. *Symptoms.*—Headache not intense, vomiting not so urgent, constipation obstinate, fever moderate.

6. *Progress.*—Slow.

7. *Duration.*—More prolonged—a fortnight to three weeks.

[Having thus gone through the list of cerebral affections for which the disease in question may be mistaken, the author next draws the distinction between it and some of the eruptive fevers, as small-pox, scarlatina, &c.]

**TERMINATION.—PROGNOSIS.**—Acute meningitis in infants may have the following terminations: 1. In death. 2. In recovery. 3. In the transition to a chronic condition.

Of these the first is unfortunately by far the most frequent. Some authors consider that this form of the disease is less fatal than the tubercular form, but we know of no good authority for the assertion. If, indeed, the absence of the tuberculous element in this form of the disease, and its occurrence in a previously

healthy constitution, might reasonably give us some hope of combating its progress with success, there are, on the other hand, to be taken into account, the violence of the inflammatory condition, and the rapidity with which cerebral disorganization is induced.

That there is, however, some ground for hope in the sporadic form of the disease is fairly to be anticipated, since even when the disease is epidemic, some recoveries occasionally take place. In looking over the works on meningitis by Gölis, Charpentier, and others, we do sometimes meet with instances in which real meningitis has been cured, although we regard the generality of the cases reported as cured to have been instances of erroneous diagnosis. [In this remark we perfectly agree with the author: it has happened to us not seldom to have met with vaunted cases of hydrocephalus cured, which have in reality been nothing more than infantile remittent, with cerebral complication.—Ed.]

It is no easy matter, if not quite impossible, to give anything like a scientific prognosis in this disease. Facts are wanting, and the disease must be re-observed. Independently of the termination in death and in recovery, some authors consider that the inflammation may pass into a chronic state. We acknowledge that this may possibly be the case, but we do not know of a well-authenticated instance. In our experience, whenever there has existed a chronic or sub-acute inflammation of the membranes of the brain, it has been so from the commencement, and has been in the instance of a tuberculous subject—a case, in fact, of tubercular meningitis, and not of simple inflammation. In those cases in which the appearance of false membranes has led some authors to believe in the existence of chronic simple meningitis, we, as we have elsewhere stated (*Traité des Maladies des Enfants*), consider the lesions to be the result of former meningeal hemorrhage.

CAUSES.—The causes of meningitis are not otherwise than obscure, as might indeed be expected, when we consider the comparative rarity of the affection, and the imperfection in the history of infantile cerebral affections in general. Most authors agree in the great preponderance of the tubercular form of the disease over that which we have denominated the simple acute form; but they differ respecting the age at which this latter most commonly makes its attacks. Guersent, for example, states that in early infancy it is more common than the tubercular form. Bouchut affirms the direct contrary. In analyzing a certain number of cases during the composition of this Essay, we have ascertained that simple acute meningitis may attack children of all ages; but that it is especially frequent in the first and ninth years. This is shown in the subjoined table:

	Cases.	Primary.	Secondary.
1st year . . . . .	5	5	0
2d to 5th . . . . .	4	2	2
6th to 10th . . . . .	13	11	2
10th to 15th . . . . .	3	1	2
	<hr/> 25	<hr/> 19	<hr/> 6

It would appear from this table that dentition has an intimate etiological connection with the disease, as it is most frequent at the periods of eruption of the first and second dental series.

Robust children are those most commonly the subjects of this disease, at least as far as our observation goes; and boys appear to be more prone to it than girls. According, however, to the experience of others, the influence of sex is not perceptible.

Meningitis may occur in all seasons, but a larger series of observations is necessary in order to determine whether it is more frequent at certain times of the year than at others. The distribution of the cases which forms the basis of this memoir was as follows:

January . . . . .	1	July . . . . .	0
February . . . . .	2	August . . . . .	2
March . . . . .	1	September . . . . .	2
April . . . . .	1	October . . . . .	4
May . . . . .	4	November . . . . .	1
June . . . . .	2	December . . . . .	3



It does not appear, therefore, that the disease is especially prevalent in hot weather, though it is incontestably occasionally produced by insolation. M. Guersent alludes particularly to this cause:—"The prolonged exposure to the sun's rays is," he observes, "one of the most common causes of acute meningitis, especially in very young children. I have many times had proof of this, and particularly in one instance, in which an infant which had been left exposed to the mid-day sun in the garden died of most extensive meningitis of the surface of the brain and cerebellum." (Dict. de Méd.) Dr. Whitehead also attaches great importance to the influence of insolation. According to him it is the most potent of all the causes of the disease. (Medical Gazette, Jan. 1844.)

Among the occasional causes of acute meningitis is the repercussion of eruptions of the scalp; among the cases which we have met with the majority were either the subjects, or had recently been cured, of eczema, favus, or impetigo.

Direct causes, such as blows, &c., may induce meningitis in infants, as in persons of greater age. Parent gives the case of a child of ten years of age who died of meningitis, the consequence of fracture of the orbital plate of the frontal bone; such instances are, however, rare.

**TREATMENT.**—What we have said respecting the causes of acute meningitis applies still more forcibly to its treatment. We are not able, in the present state of science, to point out the most successful means of arresting the progress of the disease. The treatment is *prophylactic* and *curative*.

1st. *Prophylactic treatment.*—The hygienic rules which we have elsewhere insisted upon, in reference to tubercular meningitis, are only partially applicable to the disease in question. Instead of the tonic medicines, so applicable in the tuberculous constitution, it is necessary, in the probable subjects of this disease, to advise a cooling and slightly antiphlogistic regimen. The bowels should be kept free, and care should be taken to maintain an equable temperature in the extremities; the hair should also be kept short and thin, so that the head may be cool; and, lastly, tepid baths should be frequently administered.

As we have no intention to write an article on hygiene, we shall content ourselves with these general rules; but while upon the subject, we think it right to allude to the precautions which are necessary in treating the chronic scalp-eruptions of children.

When the cutaneous inflammation occupies but a limited surface, it may in general be cured without risk; but, on the contrary, when the diseased surface is extensive, the rapid denudation of the inflamed skin, by a removal of the scabs, may be followed by the worst consequences. Whatever be the explanation of this, the fact remains certain. Common sense, then, indicates that in order to avoid danger these scalp-eruptions must be treated with caution, and as the injurious effects seem to be proportionate to the extent of the denuded surface, it is advisable to treat but a small portion at a time, and to encourage free action of the bowels as a derivative.

2d. *Curative treatment.*—Acute meningitis, as the most formidable inflammatory affection to which infancy is subject, requires an energetic treatment. The indications to be fulfilled are both general and special. Among the former we may mention—1st, active antiphlogistic treatment; 2d, to favour the absorption of effused products; 3d, to replace the antiphlogistic treatment by one vigorously derivative, during the period of collapse; 4th, to guard against all nervous excitement.

The special indications have reference to the exciting cause of the disease, and thus the treatment must vary accordingly as it succeeds to the rapid declension of a cutaneous affection, or assumes the convulsive or phrenitic form, or appears sporadically or epidemically:

1st *Blood-letting*—Authors are not agreed as to the propriety of abstracting blood in tubercular meningitis, but in the acute form there can be no question of its advantages. In young infants leeches are to be preferred to general bleeding; but in children of the age of four years, bleeding at the arm is the best. When leeches are determined upon, they are to be applied in numbers proportionate to the age of the child, either to the head or to the extremities, as the circumstances of the case may appear to require.

2d. *Cold applications, blisters, &c.*—Heim was one of the first physicians who employed cold affusion in meningitis, and appears to have placed such confidence

in this measure as to be indifferent to the employment of others. The plan was to pour cold water upon the head for ten minutes in every hour.

[The author here enters into a long account of the different modes of applying cold, but as they are in common use, we need not occupy our pages with their description. The author him-self gives the preference to a mode of irrigation, which consists in conducting water guttatim by means of a skein of thread, which is made to hang from a vessel of water over the head.]

Cold applications are only useful in the early stages of the disease; all authors, without exception, condemn them as hurtful when coma supervenes. Some writers then recommend the substitution of warm applications, and Romberg more especially approves of them: Guersent also speaks favourably of their use when there is little heat of head. We have no personal experience of this matter, but should question their advantage. A measure in which we have more confidence is the application of warm stimulating fomentations to the extremities.

The employment of blisters must next occupy our attention: writers differ somewhat as to the period most suitable for their use. Charpentier advises them from the beginning, and applies blisters to the legs within some hours of the commencement of the treatment; if no amelioration follows these, he then applies others to the thighs or abdomen, and again later, to the nape of the neck.

There is one case in which we must not omit to induce vigorous counter-irritation of the scalp, namely, in those instances in which the disease has supervened upon the retrocession of a cutaneous eruption. In these cases blisters to the scalp or frictions with croton oil are strongly indicated; we give the preference to the latter, and could relate cases in which it has been followed by the best effects.

*Purgatives.*—We have no great faith in this class of medicines, but, on the contrary, have seen reason to believe that by exciting intestinal irritation, they diminish the chances of recovery, without in any measure removing the original disease; nevertheless, it must be stated that Abercrombie, Deloyen, and others regard purgatives as a valuable addition to the treatment of meningeal inflammation.

*Alteratives.*—The rapid progress of acute meningitis—the early formation of morbid effusions—the predominance of fibrin in the blood—all indicate the employment of those medicines which promptly and effectually modify the crisis of the blood, and at the same time encourage the absorption of the effused products.

Mercury, in whatever form it is employed, should not be exhibited until after blood-letting, local or general. Some difference of opinion exists as to the dose which is most suitable. Gölis prefers small doses, as the fraction of a grain: others, and more particularly the British practitioners, give it more liberally. Mercurial frictions are to be preferred to the internal administration of the mineral, as less likely to excite formidable intestinal symptoms.

Of late years the preparations of iodine have been well spoken of, especially in the period of collapse; we have had small experience of their effects in acute meningitis, but have found them quite imperative in the tubercular form of the disease.

Having thus gone through the principal remedies, we shall, in conclusion, lay down the following *resumé* of our practice, in the different forms of the affection:

1st. In the case of a robust infant, seized suddenly, or after a restless night, with violent and repeated convulsions, the child being comatose during the intervals, with squinting, contracted pupils, quick pulse and respiration, if no cause can be assigned for the attack, we adopt the following line of treatment.

One or more applications of four leeches to the knee; large cataplasms to the extremities, frequently renewed; cold applications to the head.

If the convulsions persist after the lapse of twenty-four hours, and the coma is not less during the intervals, leeches must be again applied, and irrigation be substituted for the cold lotions. Calomel is to be given internally, and mercurial ointment rubbed into the axillæ and thighs. If the child becomes pale, the pulse falls, and the convulsions are less frequent, the continued application of cold must be suspended. If confirmed coma supervene, blisters may be applied instead of the cataplasms, these being kept on only sufficiently long to redden the skin, and then

moved to another spot. The calomel may now be replaced by the iodide of potassium.

[In the management of the above case there appears to us one great omission, viz., the non-performance of lancing the gums, with the exhibition of enemata. As it is next to impossible in the first instance to diagnose centric from eccentric convulsions, the latter treatment should, in our opinion, always premise the more severe measures above indicated.—Ed.]

2d. In a young child, of one or two years of age, of strong constitution, who is seized with fever, with continual somnolence, and accelerated pulse and breathing, without pulmonary lesion, with a fixed stare, frequent acute cries, repeated vomiting, and constipation; if it has not been exposed to the contagion of fever, and dentition proceeds normally, the practitioner should suspect the onset of acute meningitis, and prescribe leeches and cataplasms, and then wait awhile. If the symptoms persist, he must follow out the treatment above mentioned.

3d. Suppose a child aged seven or nine years, of good constitution, after exposure to the sun, is taken with fever and headache, vomiting repeatedly, and is agitated and complains of the light; if there is no history of typhoid fever, phrenitis should be suspected, and blood be taken from the arm. If the symptoms diminish, but again increase in intensity, it is probable that the disease has an intermittent character, and quinine may be exhibited by the mouth and in an enema. But if to these symptoms delirium or coma be added, and the disease has not passed the second or third day, active treatment must still be persevered in. The bleeding is to be repeated, or leeches to be applied to the mastoid processes, cold applications are to be continually applied, and if there be no vomiting, and the bowels are obstinate, croton oil may be given. If, however, the vomiting be urgent, we should endeavour to allay it by a quarter of a grain of bismuth, given every half hour. In addition to this, mercurial ointment must be energetically rubbed in. This treatment is to be carried out during the second and third day. If, however, the pulse becomes feeble and irregular, the face livid, and the pupil dilates, the hydriodate of potash should be given, and blisters applied.

4th. In the secondary and more insidious form of the disease, it is prudent not to abstract blood. A sedative treatment offers the greatest chances of success.

ART. 96.—*Symptoms of Cerebral Disease in Infancy.* By Dr. WEST.

(*Medical Gazette*, May 21, 1847.)

[The following remarks are extracted from a valuable course of lectures on the Diseases of Children, now in the course of publication in the "*Medical Gazette*."] ]

The painful sensations which the infant experiences soon show themselves in the haggard, anxious, or oppressed looks, which take the place of the naturally tranquil expression of its countenance. It often puts its hand to its head, or beats or rubs it, or while lying in its cot, bores with the occiput in its pillow, owing to which, in children who have suffered for any time from uneasy sensations in the head, you will often find the hair worn off the occiput. It turns its head away from the light, and lies much with its eyes half closed in a state of apparent drowsiness, from which it often arouses with a start and cries. The cry, especially in inflammatory disease, is peculiar; it is generally a low, almost constant moan, very sad to hear,—interrupted, occasionally, by a sharp, piercing, lamentable cry, almost a shriek. If the child be young, it will often seem relieved by being carried about in its nurse's arms, and while she is moving will cease its wailing for a time, but begin again the moment she stands still. You will sometimes observe, too, that if moved from one person's arms to those of another, or even if its position be but slightly altered, a sudden expression of alarm will pass across its features; the child is dizzy, and afraid of falling.

You see, then, that even in the infant there is a language of signs, by which we learn with certainty the existence of pain in the head, and the connection of this pain with dizziness and intolerance of light. You must beware, however, of concluding from any one set of symptoms that the head is the seat of real disease. The child, as well as the adult, may have sick headache, and the degree of febrile



disturbance, of heat of surface and heat of head, together with the state of the digestive organs, are all to be taken into account in forming your diagnosis.

Something may be learnt of the state of the mental powers, and of the feelings even in early infancy. Have you never watched an infant on its mother's lap, and noticed the look of happy recognition with which its eye meets that of its mother? An early result of cerebral disease is to interrupt this intercourse;—the child now never seems to catch its mother's eye, but lies sad and listless, as if all persons were alike indifferent to it, or at other times even familiar faces cause alarm, the child apparently not recognizing those who yet have always tended it. This disturbance, however, is but momentary, and the child subsides into its former condition, and allows itself to be taken by those at whom a minute before it seemed frightened.

But these symptoms are to be interpreted by the light thrown on them from other sources, and by the information both positive and negative thus obtained. You fear that disease is going on in the brain; but is the skin hot?—is there heat of the head?—are there frequent flushes of the face?—and does the accession of each flush seem connected with an increase of agitation and distress, or followed by a deepening of the drowsiness?—is the fontanelle prominent and tense, or are the pulsations of the brain to be felt with unusual force through it?—are the veins of the scalp full, or do the carotids beat with unusual force? What is the character of the pulse;—is it not merely increased in rapidity, but even when examined under exactly similar conditions, does it afford a different result each time? Do you find it irregular in frequency, or unequal in the force of its beats, or even distinctly intermittent? Again, what is the state of the pupil?—is it generally contracted, as if to exclude light as much as possible from the over-sensitive retina, or is it usually dilated, and does it act slowly, as though disease had deadened the sensibility of the nervous system?—or do the pupils of the two eyes not act simultaneously, but one more readily than the other? Do the pupils oscillate under the light—at first contracting, then dilating—and either remaining dilated or continuing to oscillate, though within narrower limits, and with a tendency to remain more dilated than at first? Or, lastly, do you find, when the child is roused, this oscillation of the pupil going on under the ordinary amount of light that enters the chamber? Now all of these are indications of disordered functions of the brain, and many of them point to disorder of a very serious kind.

But there are yet other sources from which we must not neglect to seek for information. Much may be learned from the state of the digestive functions. The bowels are almost always disturbed; usually, though not invariably, constipated, while nausea and vomiting are seldom absent. I am not acquainted with any one symptom which should so immediately direct your attention to the brain as the occurrence of causeless vomiting, and especially its continuance. At first, perhaps, the child vomits only when it has taken food; but before long the stomach will reject even the blandest fluid, and then the efforts of vomiting will come on when the stomach is empty, a little greenish mucus be rejected, with no relief, the retching and vomiting soon returning. I shall have occasion to dwell again upon the importance of this symptom, which I have known to continue for several days before any other indication of cerebral disease could be discovered. In children of three or four years old this occurrence would scarcely be overlooked; but the case is different with infants, who so often vomit the milk when ill that the mother or nurse might fail to mention it to you if you did not make special inquiries with reference to that point.

The manner in which the functions of the respiratory organs are performed, is also not to be overlooked. That peculiar, unequal, irregular breathing, to which the name of cerebral respiration has been applied, though of considerable value when present, is sometimes not observed, or not until the disease of the brain is so far advanced that all questions of diagnosis have long been set at rest. There is, moreover, a short, hard hacking cough, which you may sometimes hear, and the import of which you ought to be acquainted with, since it betokens disease of the brain and not of the lungs. There are peculiar sounds, too, which sometimes attend respiration, and are known as indicating disturbance of the nervous functions. To these, however, I shall have to return hereafter, since they

betoken a disease of a serious nature, known by the name of spasmodic croup, and which I must, in the course of these lectures, describe in full.

ART. 97.—*Excerpta from Lectures on the Diseases of Children.*

By DR. WILSHIRE.

(*Medical Times*, July and August 1847.)

1. *Diagnosis of Tubercular Meningitis*.—[The principal affections with which the above severe disease of infancy is liable to be confounded are mentioned by Dr. Wilshire in the following rotation:—Simple acute meningitis, secondary simple acute meningitis, meningeal apoplexy, hypertrophy of the brain, atrophy of the brain, cranio-tabes, phlebitis of the sinuses of the dura mater, remittent fever, dental irritation, hydropcephaloid disease.]

1st. In *simple acute meningitis*, chiefly liable to be confounded with the tuberculous variety in the second stage, you will have the accession very acute, all the symptoms intense, and the headache and agitation extreme; the febrile erethism very considerable, the vomiting of bilious matter not necessarily complicated with constipation, and coma rapidly coming on. The aggravation of the disorder is quickly progressive, and death very soon closes the scene. In *tuberculous meningitis* the accession is not acute, but often very insidious, the primary symptoms not being severe and grave, except the vomiting, and which is accompanied by constipation. Generally the intellectual functions are normal, save in their gradual torpidity as the disease progresses. The course is comparatively slow, irregular, often very much prolonged.

2d. *Secondary simple acute meningitis* is preceded by well-known primary symptoms of a special disorder, such as an eruptive fever, &c. It is not necessarily preceded by constipation, but often by active diarrhœa; sometimes by general anasarca, or acute local inflammation of the chest, abdomen, &c., with deficient secretion of urine, and with high fever.

3d. *Meningeal apoplexy* and *cerebral hemorrhage* can but rarely tend to hinder your diagnosis, although you will find a very interesting case in Rilliet and Barthez, of a girl who died after exhibiting the symptoms of the tuberculous disorder—some other symptoms, however, being superadded; and after death a large clot was found in the left optic thalamus. The comparative rarity of these hemorrhagic affections, the very great irregularity of their symptoms, and the very early supervention of convulsions, will help to assist your diagnosis. I may refer you, however, to the writers I have named.

4th. *Hypertrophy of the brain* is more likely to be confounded with *chronic hydrocephalus*, in some of its forms, than that with our present malady, except, perhaps, in those cases alluded to by Mauthner, where the hypertrophy assumed an active character in consequence of the cranial parietes not yielding to the rapidly increasing growth of their contents, and in which the symptoms were those of active cerebral disorder and of compression. But “we do not believe that the diagnosis between induration and acute hydrocephalus is so difficult as writers pretend; not that it is so easy to recognize the former malady, but because, with a little attention, we can easily exclude the possibility of the meningitic disorder.” (See Rilliet.) *Partial induration* has been described by one or two continental writers, the symptoms of which are very obscure, chiefly consisting in very rapid emaciation, convulsions, and torpor.

5th. In those cases of *phlebitis of the sinuses of the dura mater* which have been recorded, and in which the patients died after presenting cerebral symptoms, such as giddiness, syncope, dilatation of the pupils, strabismus, grinding of the teeth, alternate contraction and relaxation of muscles, &c., secondary affections have given rise to these symptoms, such as hemorrhage, effusion of fluid in the ventricles, softening, capillary apoplexy; or these lesions have existed, and yet the symptoms were such that no connection could be traced between them. In some examples death has been quite sudden.

With respect to the diagnosis between “acute hydrocephalus” and febrile diseases, I may remark that *typhoid fever* is not very frequent in children: the tongue is brown and loaded, diarrhœa often present, and heat of body and thirst in the early periods more intense; the pulse is more equable, as is also the respiration;

there is much more debility from the onset, and an absence of convulsions, paralysis, &c., and other peculiar cerebral symptoms usually seen in the affection of the brain.

6th. *Remittent fever* is more common, abdominal complication frequent and evident, and the lips red, chapped or fissured, and retracted in bad cases. In the milder, the regular remissions and exacerbations of the fever, heat, the thirst, the readily-procured evacuations, the often brightness of the eye, and the state of the tongue, together with, in many cases, the existence of stomatitis, will help the diagnosis. In the brain disorder the abdominal or digestive complications are attended with well-known cerebral symptoms and tense fontanelles, and the lips, tongue, heat of body, thirst, and appearance of the eyes are not those of the febrile disorder.

Now and then, even with your greatest attention, however, you will find yourselves at a loss to diagnose between certain forms of remittent fever and particular stages of tuberculous meningitis. I have now and then been at a loss to say whether the head symptoms which were present, together with much heat of skin, febrile exacerbation, and derangement of the digestive system, were really secondary to the febrile disturbance, and were to be viewed as likely to yield as the fever subsided, and that they were only evidences of temporary irritation of the nervous centre. In such cases I have always acted, however, very carefully, as I know that this temporary cerebral irritation and congestion of the nervous centre, not uncommon in the remittent fever of childhood, may, in a scrofulous child, lead on to perfect development of an intercurrent form of the true meningitic disorder. Upon this point, however, I shall treat more fully when I speak to you of the fever in question.

Now and then you may be called to a case on account of the fears entertained from brain symptoms present, even accompanied with convulsions. Perhaps the next day you will find that they have entirely subsided, and that the little patient is covered with one of the exanthematous eruptions. But a fortnight ago I was called to a case of this description, and on my second visit found the infant covered with a dark measly eruption; the child laboured, in fact, under that disorder which is called *rubeola sine catarrho*. But in these cases, at least those which I have seen, of the exanthemata being ushered in by head symptoms, there has not been the constipation which is observed in the meningitic disorder, nor in the younger children the tense fontanelles. In *small-pox*, which you meet with amongst the children of dispensary practice, you will often find vomiting and head symptoms usher in the malady, and it is in this exanthematous disorder that you will have to be most upon your guard in your diagnosis. I think you can better tell what is coming in *scarlatina* than in the other eruptive fevers, for here are from the first a peculiar state of the tongue and dryness of the mouth, with a strange sort of odour of the breath, even from the very first, that are not so likely to mislead you. In *measles*, too, you will, of course, mostly have the affection of the mucous membrane of the eyes and nasal passage, &c., to guide you; but, as in the case I have just told you of, they may all be wanting. In this case the eruption receded very soon, but the infant was considered to be going on so well that my attendance was no longer required: but I heard from the family attendant that four or five days afterwards it died suddenly in convulsions.

7th. The cerebral irritation which often intercurrs during *difficult dentition* may simulate somewhat the premonitory symptoms of tuberculous meningitis. But in these cases, the swollen, tender, hot, and redder gums, and the very great dryness of, or, on the contrary, the continuous dribbling from the mouth, the more irritable disposition, the frequent precedence or coetaneous existence of diarrhœa, will assist you in your diagnosis.

8th. I shall conclude what I have to say on the diagnosis of the disease I have been considering, in making a few remarks upon what Dr. Elliotson has called "spurious hydrocephalus," and to which other names have been given by various writers. You must know that sometimes soon after a naturally weak or badly brought up child has laboured under diarrhœa, or some exhausting disorder, or at a more late period of like affections in a stronger one, there will occur brain symptoms very apt to mislead an incautious practitioner into a belief that they indicate the supervention of our present disorder, or are to be viewed as symptoms of com-



mon hydrocephalus; the truth being that they are the evidences of vital exhaustion, and a very depressed condition of nervous energy—a state to be treated in a different manner from its first appearance to that which you must have recourse to in the other affection.

When I have seen this peculiar condition I have generally observed it in the stage alluded to by Dr. Gooch, viz. the child lying on the nurse's lap, unable or unwilling to raise its head; half asleep, one moment opening its eyes, and the next closing them again with a remarkable expression of languor; there is great heaviness of head, drowsiness, but no pain or active febrile symptoms present. In addition to these symptoms, and on which I lay great stress, are the great pallor of the face and coldness of it, as well as of the extremities. These symptoms may be followed by "coma, stertorous breathing, and dilated and motionless pupil," or even squinting and blindness. (Maunsell and Evanson.)

Dr. Marshall Hall, to whom we were first indebted for having our attention prominently directed to this affection, divides it into two stages: the first being that of irritability, the second that of torpor. In the first "the infant becomes irritable, restless, and feverish, the face flushed, the surface hot, and the pulse frequent; there is an undue sensitiveness of the nerves of feeling, and the little patient starts on becoming touched, or from any sudden noise; there are sighing and moaning during the sleep, and screaming; the bowels are flatulent and loose, and the evacuations are mucous and disordered." Now, if these symptoms are not properly treated by the administration of gentle stimulants and cordials, the second stage of Dr. Hall will follow, and the patient sink in a state of collapse. The second stage, with which I am alone familiar, is marked by the symptoms I have just spoken of. However, I cannot do better than refer you to the last edition of Underwood, in which you will find much more about the disorder.

If you were called to a case where the child is lying, as I said, on the nurse's lap,—either very drowsy, or in a state of great languor, or in deep stupor (for I do not know what else to call it), with pale, cold face and extremities, dim eyes, perhaps squinting or dilated pupil, or with, now and then, twitchings, or even convulsions, and irregular or suppressed respiration,—you should at once inquire if the child has had diarrhœa for some time, or has been treated by much depletion in any way for a presumed inflammatory disorder; for, if such has been the case, it is in all likelihood suffering under intense depression of vital power, and it must be treated accordingly. It is in this, also, that I agree with Gooch, in only having seen this "spurious hydrocephalus" occurring after exhaustion from diarrhœa and depletory treatment; and this is a very great point for me to help myself in the diagnosis. On the other hand, Dr. Hall, in most of the cases he has seen, says that "the child has had no previous illness, and the leeches have been applied subsequent to the drowsiness, and as a remedy for it." But still Dr. Hall admits that a state of *exhaustion* had existed previously in all the cases he had seen or heard of.

II. *Treatment of tubercular meningitis.*—Of the purely antiphlogistic plan I need say little; it is not applicable to our present disorder, and experience proves this, since, although it has been vigorously employed in all stages of the malady, it has no effect in warding off the fatal termination; on the contrary, in many instances it will *hasten* the event. Although then we cannot hope, like Dr. Maxwell, to cure sixty out of ninety cases of acute hydrocephalus by placing the child in the horizontal position, opening the jugular vein, and continuing the bleeding until the pulse is imperceptible, yet we may hope to relieve somewhat the local congestion or increased vascular action which so frequently accompanies the early periods of the malady by applying a few leeches behind the ears, or cupping at the neck, as I have told you, and, therefore, need not dilate more upon the point here, simply enforcing on your attention the fact, that in tuberculous meningitis the inflammatory action, when present, is not of that description which is *materially* benefitted by the loss of the circulating fluid, however and to what extent it may be brought about.

In Mr. Field's "Veterinary Records" you will find two cases of hydrocephalus, related as occurring in the horse, and which, on dissection, showed the ventricles distended with water, &c. These horses were freely bled, and rapidly became

worse, and died. Mr. Field remarks that "an animal, under such circumstances, cannot bear the loss of blood, extreme restlessness, &c. supervening."

With respect to the *mercurial* plan, I might say a little more in its favour, and others you will find who place great hopes upon it. But even here all that I look for is the value of the mercurials exhibited in producing continued action on the bowels, and exciting more biliary secretion from the liver. As to the specific power of mercury in stopping the progress of the disorder I have no belief, or in its supposed virtue of hindering the ventricular effusion, as is rested upon by some. Many, in this disease, have given enormous quantities of calomel: one case is on record in which 310 grains were given, and an abundant salivation was produced, and the child is said to have recovered. Dressing the blistered surfaces with the mercurial ointment, along with the internal exhibition of some one or other form of the metal has commonly been adopted. You will find that many of the cases of averred recovery from acute hydrocephalus have been treated by this plan; and, says Dr. Bennett, "weighty and varied testimony in favour of calomel might be adduced from numerous authors who have written especially on this subject, from Dr. Dobson down to the present day."

The next general plan which has been by some adopted is that of powerful and constant *purgation*, and I am myself inclined to lean to it more than to any other, when adopted in combination with counter-irritation. I think Rilliet and Barthez do not bestow by any means the credit upon this method which it deserves. Whytt and Rush strongly recommended it, Abercrombie gave croton oil, and Clutterbuck and Elliotson elaterium. The latter I have administered myself. I prefer, however, keeping up purgation by means of aloes and sulphate of potash, and injections of castor and turpentine oils.

Of *counter-irritation* and *derivation* by means of mustard cataplasms, blisters, and dry cupping, &c., I have a high opinion—so far, at least, as I can have in this disease of anything applied as a means of cure. Many persons of repute have recommended them, often differing, however, where and when they should be employed. Some blister the scalp, others the neck, or the mastoid processes, whilst others advise the epigastrium or lower extremities to be attacked. "Hot-water moxas" on the posterior portion of the nape, and the common moxa to the occiput and behind the ears, have also been recommended. Myself, I prefer, on the whole, blistering behind the ears, and repeating mustard poultices to the nape of the neck, whilst iodine ointment is applied to the shaven scalp, and pediluvia of hot water containing salt or mustard are had recourse to in the earlier stages of the malady; afterwards a blister to the whole scalp, kept open by an irritating ointment.

Some have given largely *narcotics* and *sedatives*; and a few agents, like digitalis and opium, have received high encomiums, especially the former. I must refer you to Dr. Bennett's book for information upon this method, however, as I know nothing about it myself, never having witnessed any one symptom, viewed in relation to the generally observed post-mortem appearances met with in this disorder, which appeared to authorize me in adopting it. Yet it has great names in its favour.

I advised you, you will recollect, to give *iodine* internally, and use it externally as well; and you must know that this agent has lately been very strongly recommended both by some of us and the continental practitioners. I am disposed to place much more reliance on it than on mercury, viewed as a specific agent in controlling scrofulous inflammation and its effects; as, also, over those aberrations of simple nutrition so characteristic of the scrofulous constitution, and which I have already fully touched upon, it has more power than anything else. In practice I have seen decided benefit from its use. With regard to its mode of administration, &c., I have spoken to you before. Some few have more strongly recommended the combination of iodine with mercury in the form both of the proto- and deuto-ioduret of mercury, and each has been said to have produced cures. I gave the latter in two cases which proved fatal. I followed the formula quoted by Bennett from Schmidt's "*Jahrbücher*:"

R.—Calomel, gr. viij;  
Iodini, gr. j;  
Sacchari albi, gr. lxxx;

M. fiat pulv. et divide in partes xvj æquales. Sumat j 4ta quaque horâ.

In preparing the deuto-ioduret, the calomel should be first rubbed with the iodine and afterwards with the sugar.

Excitants and cordials have been rightly recommended in the latter stages of the disorder, and I have seen a temporary rousing of the powers from their use; but at this period, whatever is done, the child always dies.

Certain special agents or *empirical* means have been, of course, recommended, such as musk, oxide of zinc, phosphorus, and quina. Nor has the tincture of cantharides been forgotten, or colchicum, or enemata of tobacco!

ART. 98.—*Treatment of Chronic Hydrocephalus.* By Dr. WEST.

(*Medical Gazette*, Aug. 13, 1847.)

Dr. West does not know of any plan, on the whole, more likely to be of service than that of Professor Gölis, of Vienna. The latter advises, as the result of many years' experience, that the head should be shorn, and that one or two drachms of diluted mercurial ointment should be rubbed into the scalp daily. The head is at the same time to be kept constantly covered with a flannel cap, and a quarter or half a grain of calomel should be given twice a day, unless diarrhœa ensues, when inunction alone is to be proceeded with. This plan should be persevered in for thirty or forty days, when, if the patient appears to improve, the remedies may be gradually diminished, but the cap should still be worn. Should no improvement appear after the lapse of six or eight weeks, a diuretic may be added, and a blister frequently be applied to the back of the neck.

Bandaging the head, as was recommended by Mr. Barnard, of Bath, (*Cases of Chronic Hydrocephalus, &c.*, 1839.) is considered by Dr. West as a valuable adjunct to other treatment. He considers the following directions given by Trousseau on this point as worthy of attention: Strips of diachylum plaster an inch broad are to be stretched—first, from each mastoid process to the outer part of the opposite orbit; secondly, from the occipital protuberance along the sagittal suture to the root of the nose; thirdly, across the whole head in such a manner that the strips shall cross each other at the vertex; fourthly, a strip is cut long enough to go thrice round the head. Its first turn passes above the eyebrows, above the ears, and a little below the occipital protuberance, so that the ends of all the other strips project about a fourth of an inch beyond the circular one. These ends are then doubled back upon the circular strap, and another turn round the head is taken over them. By this firm and equable pressure upon the head is sustained. Some care is necessary in watching any symptoms of cerebral compression under this treatment.

[Dr. West does not consider compression as applicable to all cases of the disease, and regards it as a dangerous proceeding when any appearance of active cerebral disease exists. Speaking of puncture of the cranium in chronic hydrocephalus, he mentions that of 63 cases 18 terminated favourably, but considers the cases not to be reported with sufficient accuracy to warrant our placing implicit confidence in them. He regards these cases only as favourable to the operation in which the fluid is contained in the arachnoid sac, and in which the general health is not materially disturbed.]

ART. 99.—*Remarks on the Diagnosis and Treatment of True or Inflammatory Croup.* By Dr. MEIGS.

(*Amer. Journ. of the Med. Sciences*, April 1847.)

[The author relates seven cases of inflammatory croup, two of which proved fatal. These our space does not allow us to detail, but we give, with some abbreviation, the practical remarks to which they serve as a text. In reference to the history and diagnosis of the disease, he observes:—]

After a careful study of the highest authorities on these points, we are induced to believe that the descriptions of Barthez and Rilliet are the most accurate. These authors describe first pseudo-membranous laryngitis, of which the cases reported are instances. They next consider spasmodic laryngitis, the stridulous laryngitis of Guersent. This is the affection to which the term croup is familiarly applied. It attacks children *suddenly*, generally in the night, and during good



health; and it seldom lasts beyond a few hours, or one or two days. It does not come on slowly and insidiously, like true inflammatory croup; it is not accompanied by exudation of fibrine, and is a disease of comparatively little danger. It is different, also, from the laryngismus stridulus of English writers.

Both Rilliet and Valleix are careful to draw a distinction between inflammatory croup and spasmodic croup; indeed, the difference is so marked that we are surprised at their being ever confounded; they are widely different diseases, running a different course, requiring a different treatment, and having a different termination; one so fatal as to be deemed incurable, the other seldom ending fatally. The pathological element in one is spasm, of the other violent inflammation of the larynx, trachea, and even of the bronchia, with the formation of false membranes.

Laryngismus stridulus is different from either pseudo-membranous laryngitis, or spasmodic croup. Spasm of the glottis is a chronic disease, lasting weeks or months. It is not accompanied by fever; it is attended by general convulsions, which are slight at first, but become more marked as the disease progresses. These differences are sufficient to distinguish the disease, which is almost unknown in France and America, from spasmodic croup, which is as common as the other is uncommon.

[In proof of the infrequency of spasm of the glottis in America, the author, whose experience is extensive, states that he has only seen one instance of it, which he reports. He then alludes to another form of spasmodic laryngeal affection in the following words:—]

This is the disease popularly known in America by the phrase "breath-holding spells." We have met with it only during the first dentition. It appears to be the result of a sudden closure of the glottis, or of a spasm of the diaphragm, so that the child for a time ceases to breathe. After a few seconds it bursts into a scream, which lasts till it has passed. These attacks are produced by various causes, as fright, pain, &c., and, where the predisposition is strong, occur whenever the child cries.

[The Editor has had frequent opportunities of witnessing the above state in his own children, two of which seldom or never cry violently without having an attack such as the author describes. It appears to him to depend upon spasm of the diaphragm, and to occur during the state of expiration. He has seen the breath held till a state of lividity of countenance has been induced calculated to excite considerable alarm, and has sometimes been obliged to induce an excitomotor act of inspiration by dashing cold water on the face; the inspiration is then followed by a loud cry, and the state of spasm is not repeated during the same fit of crying.]

After the above remarks on the diagnosis of these laryngeal affections of children, the author proceeds to make some comments on the treatment employed by him in the cases which he narrates:—]

Depletion was used in all the cases—in all but one blood was taken by venesection—in that instance leeches were substituted. The quantity of blood taken varied.

Emetics were used in all the cases; the one employed on all occasions but one was powdered alum—the exception was one in which the bulk of the medicine was an objection: in this case ipecacuanha was substituted. In the same case small doses of tartar emetic were given. In three other cases the *Mel scillæ comp.* was given as an expectorant after the violence of the symptoms had subsided.

The principal means employed in addition were calomel and caustic applications to the fauces. Calomel was used in all the cases but one—that one was fatal. The largest quantity given was 40 grains—the smallest, 8 grains.

Caustic applications to the fauces were used in all but two cases—that employed was a solution of lunar caustic, grs. x to ʒj, applied with a camel-hair brush. The remedies which appeared to have the most decided influence were emetics and calomel.

The alum was given in doses of a teaspoonful with syrup or honey, repeated in 20 minutes if necessary—a second dose is seldom required. It has the advantage of operating without inducing exhaustion; we have exhibited the above dose

two or three times a day, for several days, without observing dangerous prostration.

ART. 100.—*On the Pneumonia of Childhood.* By Dr. FRIEDLEBEN, of Frankfort.

(*Archiv für Physiolog. Heilkunde*, 1847, and *Month Journ.*, June 1847.)

1. *Lobar pneumonia*.—Friedleben divides the symptoms of infantile pneumonia into four stages: 1st. Commencing stage, indicated by short breathing, hot skin, quick pulse, thirst, dry nose, abdominal breathing. Sometimes, at this stage, the disease is mistaken for head affection, in consequence of the presence of convulsions and vomiting. The true nature of the case is then best demonstrated by dullness on percussion. On auscultation merely coarse breathing and dry râles are heard; distinct pneumonic crepitation is rare. 2d. Advanced stage (red hepatization): dull sound on percussion, bronchial respirations were never absent. It is remarked that while the upper half of the chest remains motionless, the lower half, from the seventh to the ninth rib, is forcibly pushed outwards in respiration; this symptom is always observed in pneumonia, whatever part of the lung be affected. Neither cough nor pain are constant symptoms—the cough, when present, is always dry, and sometimes painful; and when pain is present, it is remarkable that the little patients always refer the seat of it to the scrobiculus cordis. It has been stated that the breath of children affected with pneumonia is hot, but Friedleben found this was not the case in the great majority of cases, even when the inflammation was remarkable for its extent and intensity; but the skin of the thorax uniformly felt preternaturally hot to the finger. In general the little patient lies on the back. However incredible it may appear, even this stage of pneumonia may be overlooked, unless it be made a rule to examine the physical signs of the chest in every case of acute disease. 3d. Stage of transitus (crisis veterum): when the red hepatization does not, by its great extent, cause the death of the child, it may pass into the stage of convalescence; in which case the decline of the physical and other signs takes place in the usual well-known manner. The cough, when previously absent, now commences, and, in most instances, without perceptible expectoration, since the child swallows whatever is brought up from the air-tubes. One of the most favourable signs is the spontaneous discharge of mucus from the nose, even when the child is not lying on the belly. Lastly, red hepatization may be changed into gray hepatization, or the stage of suppuration. Sinking of the pulse, decrease in the heat of the skin, slight sopor and delirium without essential change of the physical signs, intense shaking cold; lastly, the status nervosus of former physicians, or, more properly, the pyemic state, are the symptoms usually met with. In addition to these there are to be met with, in not a few instances, hydrocephalic appearances, which, however, are shown by many post-mortem examinations to be dependent merely on hyperemia of the brain. Friedleben saw recovery after the symptoms of this stage had set in, in two cases only; and the fatality of the disease is the consequence of our mistaking the nature of the disease in its earlier periods. The following case illustrates the necessity for early and careful examination of the chest:

A girl, 4 years old, hitherto healthy and robust, was treated for eight days by a physician. He took no alarm at what was apparently a febricula gastrica, as the little patient continued to play about the room during the whole day. But suddenly the breathing became laborious, the sensorium disturbed, the fever considerably increased. An examination of the chest was now made for the first time, and showed pneumonia of the right lower lobe. It was, however, now too late; and in thirty-six hours more the girl was dead. The post-mortem examination exhibited not only gray hepatization and purulent dissolution, but even a commencing vomica—evidence enough of the length of time pneumonia had been present.

[As to the modification of the symptoms produced by the several periods of childhood, Friedleben has made the following observations:]

During the first year great restlessness, constant crying, dislike of the nipple or sucking-glass, occasional vomiting, and relaxed bowels are the signs of the first stage. In the second stage, the infant now takes the nipple or sucking-glass, and

the skin becomes very hot; at this period the infant cries less than in the former stage, and falls frequently asleep, though he is awakened by the slightest noise. The third stage was constantly succeeded by convalescence or death; never by gray hepatization or suppuration. Induration was observed only once. During the next four years of life the first stage is generally overlooked, unless occasional convulsions or vomiting strike our attention. In the progress of the disease hydrocephalic symptoms become often so prominent as to mask altogether the primitive and chief disease. It is to physical signs alone, then, that we owe a safe diagnosis, and the proper therapeutical indications. True inflammatory hydrocephalus is, according to Friedleben, of exceedingly rare occurrence; the effects of cerebral tuberculization being more frequent. The hydrops ventriculorum cerebri, subsequent to scarlatina, cannot be considered as the result of true encephalitis.

*Lobular pneumonia.*—This form, as a primitive disease, was observed by Friedleben in the first year only. The onset of the disease is betrayed by a striking shortness of breath, and violent abdominal respiration. Percussion and auscultation furnish but unsafe signs. Cough is never absent. The first stage was never examined, for in most cases it terminated directly with the death; in others it assumed a lingering course, and occasioned a fatal termination by affording a substratum for tuberculous deposits, or by passing into perfect induration of the diseased portion.

*Duration and termination.*—In the great majority of children affected with pneumonia, the first stage lasted for twelve hours, the second for three days, the third from five to seven days, after which period decided convalescence commenced. The following case is, however, decidedly exceptional. A boy, five years old, who had played the whole day with his companions, and taken supper as usual, was seized in the night with headache and great heat. When a physician saw him next day at noon his consciousness was already lost, the respiration was stertorous, the arterial pulsation hardly perceptible, the extremities cold, the pupils dilated, the power of deglutition lost; on the same day, at three o'clock, the boy died. The post-mortem examination exhibited a partial arachnitis over the left hemisphere, and completely developed gray hepatization of the upper lobe of the left lung. In this instance, then, the fourth stage of pneumonia was thus developed within from eighteen to twenty hours. According to Friedleben's experience it often happens, that on the termination of pneumonia the little patients cut one or more milk teeth, and when of a more advanced age, even some of their permanent teeth.

*Etiology.*—Heat and cold rank among the causes; and when pneumonia arises from the former cause it is much more fatal, owing to the greater liability to diffuse hepatization and suppuration. From the second to the fifth year is the period when the greatest predisposition to pneumonia exists; after that period the liability becomes much diminished. Among the diseases which dispose to pneumonia are, previous pneumonia, measles, laryngo-tracheitis exsudativa, arachnitis, typhus abdominalis, pleuritis, and pulmonary tubercles.

*Recapitulation.*—1. That true lobar pneumonia is one of the most frequent diseases of childhood. 2. That the anatomical alterations are quite the same as in adults, and that the so-called catarrhal pneumonia is not the proper pulmonary inflammation of childhood. 3. That there is little difference in the course of infantile pneumonia, except in the greater liability to suppuration. 4. That pleuritis is not a common complication. 5. That in most cases both lungs are affected. 6. That though sometimes secondary, it is for the most part of a primitive character. 7. That lobular pneumonia is of rare occurrence, and very uniformly of secondary origin. 8. That the pneumonia of infants has sometimes proved fatal in from twelve to twenty hours. 9. That percussion and auscultation are the only safe grounds of diagnosis. 10. That sneezing is the most favourable sign in the stage of resolution. 11. That on superficial examination pneumonia is often marked by the apparent symptoms of arachnitis, hydrocephalus, and typhus abdominalis.

ART. 101.—*On some Uncommon Forms of Abscess in Children.*—[Mr. Rees alludes to two localities in which abscess occasionally forms in young children, and which



he thinks has not previously been pointed out: these are the antrum and the hip, in the latter case unconnected with disease of the joint. He observes:]

Abscess of the antrum I have met with only twice; it occurred in both instances in young infants, born with the face towards the pubis. I believe it was the pressure of the arch of the pubis which gave rise to the mischief. The following sketch will show that these are not always trifling cases. A child, aged 2 weeks, was brought to me with considerable swelling and inflammation of the left cheek, the redness extending round the eyelid, and just below the eye there was an appearance of pointing; the swelling was deep-seated, implicating the floor of the orbit, so as to protrude the eye to a great extent; the conjunctiva is inflamed, and there is chemosis; the left side of the palate was observed to be depressed so as to form a tumour projecting into the mouth: ulceration had commenced along the dental seam, and one of the rudimentary molar teeth was visible. As the nature of the case was apparent, I extracted the tooth, and thrust a director upwards which easily found its way into the antrum, and was followed by a slight discharge of pus. On the following day I opened the abscess on the cheek, near the inner canthus, but the swelling of the face was little if at all diminished. I therefore injected warm water into the antrum which was followed by a copious discharge of matter, and from that time the case rapidly improved. The openings on the cheek and in the mouth remained fistulous for some time, but finally closed.

Abscess of the hip is not a less troublesome case. I have seen as many as five examples, four of which were in children under two years of age. The extreme pain, the short cry uttered when the infant is moved, and the anxious expression of countenance, led me, in two cases, to suppose at first that cerebral disorder was impending, until swelling over the gluteal region declared the nature of the disease. The matter in these cases was bound down by the fascia lata, and, unless easily discharged, burrows round to the front of the joint, inducing great pain and constitutional disorder. The treatment I have adopted is to lance the abscess behind, and enlarge the opening into the fascia under the guidance of a director.

[Underwood (*Diseases of Children*, last edition) alludes to these abscesses, and as he mentions them in juxtaposition with morbus coxarius, was evidently aware of their diagnostic relations with that more serious affection.]

*Medical Gazette*, May 14, 1847.

# REPORTS

ON THE

PROGRESS OF THE MEDICAL SCIENCES.

*July—December, 1847.*

THE intention of the following Reports is to pass in review the principal additions to each department of Medical Science, which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful, will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and the removal of disease.



# I.

## REPORT ON THE PROGRESS OF PRACTICAL MEDICINE, PATHOLOGY AND THERAPEUTICS.

BY THE EDITOR.

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[The figures in brackets refer to corresponding Articles in the Abstract.]

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### PART I. GENERAL PATHOLOGY.

#### § I.—*Diseases of the Blood.*

1. *Scurvy*.—The great prevalence of this once well-known, but now comparatively rare disease in various parts of the kingdom, has during the last few months given rise to several communications of greater or less value, of the principal of which it will be our province to give an analysis in the present Report. In our notice of them, we shall take them as nearly as possible in the succession in which they were published.

—Dr. Shapter gives a description of the disease as it appeared in Exeter and its neighbourhood. In this epidemic, the initiatory symptoms are described as those indicative of general debility, to which certain more special phenomena were superadded. The patient complained of weakness and listlessness, had a sallow countenance, and *pale* and *contracted* gums. The latter symptom is pointedly alluded to, as in all cases preceding those conditions of the gums, which have usually been considered as characteristic of the scorbutic malady. The tongue is for the most part clean, and the pulse small, but not quicker than natural. As the disease makes progress, the debility increases, and pains in the limbs become severe and general. The gums now assume the peculiar swollen and spongy aspect, the breath becomes fetid, and the integuments exhibit petechial spots, ecchymoses, &c. In the last stage of the disease, of which the author has seen but one example, the breathing becomes slow and laborious, and a sanious fluid is secreted by the bronchial membrane. In the single case alluded to, death took place by coma.

After detailing several examples of the disease, the author enters upon certain general remarks much to the following effect:—He directs particular attention to the pale and contracted gums as the precursor of the spongy condition, and comments upon pain in the loins as a frequent symptom in his cases, and one which he considers to depend upon neuralgia of the lumbar nerves. In his inquiry into the etiology of the disease, he regards cold as an auxiliary cause only, and looks to error in diet for the primary exciting causes. After analysing the dietary of the patients which came before him, he fixes upon the absence of the potato as the *fons et origo mali*. He shows on the one hand, that there was no lack of good bread, and other farinaceous food, and on the other hand, adduces the evidence of Sir G. Blane and others, as to the positive antiscorbutic properties of the potato. He states also, upon the authority of Dr. Baly, the physician to the Milbank Penitentiary, that scurvy was exceedingly frequent among one set of convicts, who were only allowed half a pound of potatoes per week, while among another class, whose allowance was five pounds, the disease was unknown. This, it must be understood, was the only difference in the circumstances under which the two classes were placed. The preservative virtue of the potato is supposed to be due to the presence of tartaric acid.\*

\* Prov. Med. and Surg. Journal, June 2, 1847.

—In Nottingham, Mr. Stiff observes, that the disease was prevalent among the poorer classes, who have suffered severely from deficient and dear provisions, and more particularly from the absence of succulent vegetables. This gentleman also traces the disease more particularly to the loss of the potato. He remarks, that in the union of which he is the surgeon, potatoes formed an article of diet until Christmas (1846), and on account of their scarcity, Swede turnips were substituted with advantage until March 20th, when these were discontinued. It then became necessary, in consequence of the failure in the supply of both vegetables, to substitute Indian meal and rice, which, together with bread and meat, formed the following dietary:—For breakfast and supper daily, bread with tea, or milk-porridge: for dinner, Sunday, beef seven ounces, and hominy or crushed Indian meal; Monday, bread with meat-broth; Tuesday, suet-pudding; Wednesday, hominy with treacle and vinegar-sauce; Thursday, beef and hominy or rice; Friday, bread and broth; Saturday, bread and pea-soup. For the aged and infirm, bread and cheese, with beer twice a week at supper.

The author further states, that from about a month to six weeks after the disuse of the potatoes and Swede turnips, symptoms of scorbutus broke out amongst some of those inmates who had resided for a length of time in the union workhouse, characterized by debility, sallowness, and in several instances jaundice, petechiæ, bruise-marks, spongy and bleeding gums, neutral urine of high specific gravity—in some 1·027 at 60° Fah.

The cause of the endemic was here apparent, and means were immediately taken to prevent its spread or recurrence. The situation of the workhouse on the new red sandstone, in an elevated position, facing the country; well supplied with water, and well ventilated; dietary sufficient in quantity, no salt provisions of any kind being supplied; the time of year, namely, end of winter and beginning of spring, corresponding with its appearance in other times and countries; the period of a month or six weeks elapsing after the continuous use of farinaceous food; the subsequent dietetic alteration—all tend to strengthen the opinion that the want of a fresh succulent vegetable, containing a vegetable acid, was the sole cause of the malady.

As circumstances connected with the epidemic worthy of remark, the author mentions that neither the children at the breast of those who were subjects of the disease, or of others, suffered from it; and that he did not notice any instance under five years of age.

The disease as observed by him, commenced with debility, inactivity, sallowness of the countenance, and flying pains in various parts of the body, before the gums take on their remarkable appearance. At first the margin of the gum is livid for one or two lines, even when the mouth and lips are anemic, and this appearance resembles the lead symptom, but is not so well defined; the gum swells, separates from the tooth or stump, becomes rounded and spongy, secretes more tartar, and bleeds; in some cases the gums have been so enlarged behind and in front of the teeth that these could not be approximated, the teeth loosen, and the blood, putrefying in the mouth, causes a most fetid odour. These marks of the disease are most apparent where the teeth are carious, or where there are bad stumps; and sponginess with bleeding may exist around molars, whilst the gums encircling the teeth in front, if they are sound, may not be at all influenced. In old and edentulous subjects the gum symptoms do not made their appearance, but I am not aware whether this has been noticed by writers on diseases of seamen. Sailors afflicted with scurvy are generally able-bodied men, and few are so old as to be without teeth, so that thus it may have escaped comment.

In boys, petechiæ appeared on the legs, but were often absent when the gums were advanced to the spongy state; ecchymoses were infrequent and slight. In adults both existed, the petechiæ appearing generally before the bruise-marks. In old people these effusions of blood took on a different appearance. In most cases there was universal sanguineous effusion, or congestion of the feet and legs, bruise-marks and petechiæ frequently co-existing.

The treatment adopted successfully was the substitution of cabbage for Indian meal, rhubarb puddings, lettuce, &c., with imperial as a beverage, together with citric acid as a medicine.\*

—More elaborate papers upon the same subject have likewise been furnished by Drs. Christison, Curran, Bellingham, Lonsdale, Ritchie, &c. The epidemic of scurvy observed by the first of these writers, occurred in the General Prison at Perth, the locality and regime of which are minutely described as introductory to the account of the malady.

The diet of the prison, an important point of attention in connection with the particular object of the author's communication, is minutely referred to. In the standard rates, breakfast and supper consist of porridge and skimmed milk; and dinner of broth, made of meat, barley, herbs, roots and salt; there is some slight variation in the above in the various rates, the difference being in the quantity of bread at dinner, and of oatmeal at supper. There is also allowed a variety of substitutes for the above standard articles; for instance, potatoes for oatmeal, potatoes and milk for broth and bread, butter-milk, or treacle-water for skimmed milk, &c.

Under this state of things the health of the prisoners continued good for four years, and it was not until June of last year, that scurvy for the first time made its appearance, and in October, the author, together with Dr. McLagan, were intrusted with the duty of inquiring into the circumstances connected with its outbreak.

At the time of their visit, these gentlemen found 39 cases of decided scurvy, or of convalescence from scurvy, 37 of them males, and only two of them females. There were also 11 others, 8 of them males and 3 females, whose cases were considered at the time to be suspicious, and who in all probability were affected with the disease in its incipient stage. And in addition, a few others presented obscure symptoms resembling scurvy, but which referred rather to dyspepsia and the irritation arising from decayed teeth.

The first cases observed in the General Prison attracted the notice of the prison officers towards the end of June, or very beginning of July. In July and August the number of new cases was inconsiderable; but they increased in September, and still more in October; and 23 prisoners seemed to have been seized during the five weeks immediately preceding the author's visit. At that time indeed the disease threatened to spread even more widely; for seven decided and three suspicious cases had commenced within ten days before. The physician of the prison, however, Dr. Malcolm, had already resorted to judicious measures for arresting its farther progress. These had already begun to produce their effect; and being applied more extensively, the epidemic ceased to extend, and not a single new case occurred after the 31st of October.

In describing the cases which came under his notice on this occasion, the author thinks it unnecessary to detail with minuteness the phenomena of a disease which has been so often graphically described before. He presents only such a sketch as will identify the epidemic with the true scorbutus of nosographers, or sea-scurvy.

The disease was to be seen in all stages except that which precedes its fatal termination. In the outset there was the scurvy appearance of the integuments of the limbs, which has been insisted on by authors as an incipient or precursory symptom; together with pain, tenderness, and stiffness of the legs, some degree of tension also here and there, especially below the ham or round the ankle; and likewise some fulness, redness, and even lividity of the gums, great tenderness there, causing difficulty in chewing ordinary articles of food, and a tendency to bleeding; but no loss of appetite or any material disorder of any of the digestive functions. In more advanced cases the skin of the legs was mottled with lenticular spots of a brown or livid colour, surrounding the roots of the hairs, and by that circumstance easily distinguished from the petechiæ of purpura, which generally show themselves rather on the free surface of the integuments, where the hairs are fewest. When the disease was fully formed, the legs were more or less swollen and oedematous, very tender, extremely stiff, painful on the slightest attempt at motion, hard, and resisting on irregular spots of no great extent, or more uniformly over most of the leg, but especially in the upper part of the ham, and downwards to the termination of the gastrocnemius muscle in its tendon. The parts thus affected presented also diffuse ecchymosed patches of various sizes, or a wide-spread yellowish brownness, like what occurs during the absorption of



ecchymosis from a common contusion; and both of these appearances, but especially the latter, were attended with a peculiar solidity of the limb and a fixedness of the integuments, so that the skin could not be pinched up, as if the integuments had become firmly bound to the subjacent fasciæ and tendons by the effusion into the subcutaneous cellular tissue. In some cases of the kind there were also scattered purple petechiæ as big as a pea, or larger; but this was not a common appearance. In all cases so far advanced as these the gums were much swollen, very livid, and hanging more or less over the teeth in fleshy excrescences, which were made to bleed by the slightest rudeness of touch. There was also a liability to epistaxis in several, to hemorrhoids in a few, and to menorrhagia in one or two women. The pulse was rather frequent; the skin often rather warm; the tongue clean, though not invariably so; the breath fetid, and sometimes exactly as if mercury had been taken; the appetite tolerable or even strong; the bowels constipated; the countenance sallow and bloodless; the mind sluggish, and inclined to gloom and despondency. In those which had begun to yield to treatment, the most important symptom was the formation of various chronic eruptions on the previously ecchymosed limbs, resembling diffuse psoriasis, or in a few instances ichthyosis. Diarrhœa was a rare accompaniment, and an incidental affection only. It is indeed particularly worthy of remark that, notwithstanding the universal prevalence of diarrhœa, cholera, and dysentery, throughout the country at large during last summer and autumn, these affections were comparatively uncommon in the General Prison, whether among the scorbutics or among the prisoners generally. No case proved fatal.

In some instances the affection of the gums was the primary one in point of time; in others the affection of the limbs. In a few incipient cases we had an opportunity of observing either the one or the other singly; but no case lasted a few weeks without both affections concurring. In the generality of cases, the earliest symptom seemed to have been stiffness of the limbs, especially of the knee-joints. But it may be observed that this is an ailment which, as a separate or idiopathic affection, is apt to attack prisoners confined for long terms, and particularly the younger males.

The preceding summary can leave no doubt on the mind of any one, that the epidemic was true scorbutus or sea-scurvy. Having settled this fact, the author considers the circumstances which seem to have regulated its dissemination.

In the first place, he remarks, the disease prevailed to a much greater extent among the male prisoners than among the females.

In the second place, the disease prevailed more among adults than among the young prisoners.

Thirdly, the influence of previous confinement has proved an important co-operating circumstance.

The last circumstance which has been proved during the Perth epidemic to favour the development of scurvy, is constitutional infirmity. Extensive facts on this head are not easily obtained. But it deserves mention, that among thirteen individuals affected on the 31st of October with strumous enlargement or suppuration of the glands of the neck, or who had very recently recovered from that disorder, no fewer than six had suffered from scurvy, or about one-half.

On surveying what has been written as to the causes of scurvy, it will be seen that almost all observers ascribe it to some error in diet. At first, it was ascribed solely to salted and ill-preserved provisions; subsequently it was found that other errors are equally effectual. Great importance has been attached by some to the mere want of sufficient fresh vegetables, whatever else the food may consist of. Others have seen the disease arise seemingly from a deficiency of salt. Others have traced it to mere scantiness of food. A very liquid diet has been thought another source. A diet too purely animal has been known apparently to act with great intensity. On the contrary, a diet purely vegetable has been suspected to have had the same tendency. The author's observations are believed by him to point out another error still; and thus we arrive at the more general fact; either that various, and very different, errors in diet may all alike occasion scurvy: or that there is some particular cause of the disease, common to all these errors, and which has hitherto eluded observation.

What that particular error was, in regard to the epidemic in question, is the author's next inquiry. He proceeds as follows:—

From the statement formerly given, it appears that the diet was essentially saccharo farinaceous. The breakfast of the great majority of the male prisoners, who were on the third or highest rate, consisted of eight ounces of oatmeal made into porridge with salt and water, and fifteen fluidounces of treacle-water, containing one and one-tenth of an ounce of treacle. Supper consisted of six ounces of oatmeal, made into porridge, and ten ounces of treacle-water, containing three-fourths of an ounce of treacle. Dinner on four days of every week consisted of twelve ounces of wheat bread, and two pints of barley-broth, which contained one ounce of meat, four ounces of (decorticated) barley, about two ounces and a half of turnips, carrots, cabbage, leeks and onions, together with a due proportion of salt. On one day of every week, each prisoner on the third rate had for dinner, in lieu of barley-broth, two pints of pea-soup, containing four ounces and a half of peas, one ounce of meat, and an ounce and a quarter of succulent fresh vegetables, duly seasoned with salt and pepper. On another day of every week, the dinner consisted of twelve ounces of bread, and two pints of barley-milk, made with four ounces of barley, ten fluidounces of skimmed milk, and a little salt; and on another day it consisted of the same quantity of bread, and twelve ounces of white fish.

Now this dietary—which, for convenient reference afterwards, may be called "Treacle third rate,"—is somewhat peculiar in kind. It differs appreciably from that used in Scotland by the general population of the class to which the majority of prisoners belong. Like the food in the General Prison, that of the Scotch working-classes is chiefly farinaceous, or saccharo-farinaceous. But some use a little meat at dinner; and milk is a staple article at breakfast or supper, or both, even when meat is used at dinner, but almost always if no meat be taken at that meal. It is unfortunate that a comparison cannot be drawn between the proportion of the several kinds of nutriment thus used by the general labouring population, and the proportion in the food of the General Prison. No one has yet succeeded in obtaining an accurate account of the average food consumed by an individual of the labouring classes in Scotland, living by his own rule, and in ordinary circumstances. But the proportion of animal food must be considerably larger than in the General Prison treacle third rate, by reason of the milk which forms a staple part of their diet.

It is common for practical men, in enumerating the articles in a dietary, or in estimating the nutriment in the food, of the labouring classes, to omit or undervalue the milk consumed by them, and to regard that fluid as little else than mere drink. But this is an error. Milk is really an article of solid food; being coagulated soon after reaching the stomach. As new milk contains, on an average, 13 per cent. of digestible solids, and skimmed milk 10 per cent., the former actually presents fully one half, and the latter above a third, of the nutriment contained in the lean part of beef and mutton; and of the nutritive solids more than a third in new milk, and above a half in skimmed milk, consist of nitrogenous aliment. Hence, on scientific principles, milk must be a valuable article of food, especially when the food is composed otherwise of little else than farinaceous substances.

The withdrawal of this milk, and the substitution for it of treacle-water, is thus regarded by Dr. Christison, as the main cause of the epidemic, for he observes, that in the first place, no other cause could be assigned; and in the next, that the restoration of milk arrested, and finally cured the disease, without the aid of any antiscorbutic remedy. In a subsequent communication, the potency of this cause is further investigated among railway labourers, but having so freely entered into the former division of this essay, we can do no more than state, in general terms, that the author's views as to the causation of the disease, in the deficiency or absence of milk, appeared to him to meet with further confirmation in the class of patients among whom his latest investigations were carried on.\*

—In the number for August, of the same journal, the above views of Dr. Christison, as regards the etiological importance of deficiency of milk, are clearly shown by Dr. Lonsdale to be erroneous; while, on the other hand, he accumulates

\* Edinb. Monthly Journal, June and July 1847.

a strong body of evidence in corroboration of the opinion more generally entertained, that the disease mainly arises from want of succulent vegetables, and more particularly of potatoes. For the details of the communication, the reader is referred to the original; the conclusions to which the author is led, being as follows:—

1st. As the vegetable world became more and more blighted, man, in common with the higher classes of animals, suffered from causes apparently of an epidemic character, which have deteriorated his condition, and rendered him a more facile victim to scurvy, fever, &c.

2d. That scurvy originates in an error of diet, other supposed causes having little or no influence.

3d. Deficiency of potatoes constitutes the chief error in diet, and is the main cause of the present epidemic.

4th. The use of milk lessens the liability to, but does not prevent its occurrence.\*

The essay of Dr. Bellingham commences with the narration of six well-marked cases of scurvy, which were admitted into hospital under the writer's care; and upon these a general description of the disease is founded, and its identity established with the scurvy of former times, so well portrayed by Lind in 1772. The more prominent symptoms of the epidemic are then enumerated in the following order:

*Appearance of the gums*.—The first appearance of the disease in the gums is slight swelling and increased redness of these parts, with a tendency to bleed, commencing usually upon the inside of the incisor teeth of the upper jaw, but soon extending to both; the swelling gradually engages the gums lining the molar teeth, particularly upon the inside, or it may commence here. When the disease is advanced, the appearance of the mouth is very disgusting, the gums upon both sides of the teeth are red and swollen, presenting a broad irregular surface, and resembling the fungous granulations of certain ulcers, bleeding from the slightest cause, impeding articulation, and almost totally preventing mastication. When more advanced, the gums overhang the incisor teeth, and cover and almost conceal the molars; the breath at the same time is most offensive, resembling that of a person under the influence of mercury, but even more disagreeable. The local application which seemed to answer best in these cases, and which was the most grateful to the patient, was a gargle composed of tincture of myrrh, tincture of bark, and cinnamon water.

*Spots of purpura simplex*.—Spots resembling those of the purpura simplex of Willan and Bateman were among the earliest symptoms; they were always first observed upon the lower extremities, usually below the knees, and were often limited to these parts; in no instance did I notice them upon the face. Many of these spots were small, resembling the maculæ of typhus, or flea-bites; the majority, however, were larger. As they faded they assumed a dull-brown colour, just as is observed in purpura simplex. They were not elevated above the surface; in one or two instances they seemed to be mixed with papulæ, as they were attended with considerable itching.

*Patches resembling purpura hæmorrhagica*.—Large patches, resembling those figured in Willan and Bateman's work as characterizing purpura hæmorrhagica, were observed only in the more advanced stage of the disease; in some instances these seemed as if formed by the union of many smaller patches; their shape was irregular; they were seen most frequently in the vicinity of the joints, particularly upon the inside and outside of the ankles; several were often present in the same patient, and their size seldom exceeded that of a half-crown. In one patient recently in hospital (who, however, showed no other symptoms of scurvy) they had a very unusual site—viz., around each eye, and under the conjunctiva covering the sclerotic coat. It commenced in the cellular tissue about the right eye, and then extended to the globe, and continued to increase until no part of the sclerotic coat was visible, and the conjunctiva covering it had a deep blood red colour. The left eye then became similarly affected, and the patient presented a most extraordinary appearance. After a time the effused blood began gradually to be absorbed, and the patient left the hospital well.

\* Edinburgh Monthly Journal, Aug. 1847.



*Patches resembling ecchymoses.*—Patches of discoloration, resembling the effects of a contusion or bruise, were very common, and were sometimes the first symptom noticed. In the very early stage, the discoloured appearance of the skin might have been mistaken for dirt; after a time the part presented a most remarkable resemblance to the effects of a bruise or contusion, all the shades of colour which are familiar to us after such an injury being present. These patches of ecchymosis were in a great measure confined to the extremities, and were much more common upon the lower than the upper extremities; they were usually seen in the vicinity of the joints; a common situation was the ham, or the calf of the leg, or about the ankles; sometimes they were seen upon the thighs, the front of the wrists, or the arms; in one instance, immediately over the patella. They were almost always accompanied by the spots and patches of purpura already described.

*Swelling and stiffness in the hams.*—A symptom which was sufficiently common was a stiffness of the hamstring tendons, accompanied by hard, painful swelling in the popliteal space. This usually commenced in one limb, and soon extended to the other. This condition was marked by considerable pain on motion, and by patches of ecchymosis upon the part, the space between the tendons of the ham appeared to be filled up, and the swelling extended below the joint to the calf of the leg; the part was hard to the touch, and the patient suffered so much pain upon motion as to incapacitate him from walking, and it was for this symptom alone that he sometimes sought relief. Swelling and stiffness in the hams were sometimes the first symptoms noticed, and sometimes almost the only one present. The local application which appeared to afford most relief in it was “the anodyne liniment” of the pharmacopœia.

*Edematous swelling of the extremities.*—When the disease was at all advanced, more or less swelling of the lower extremities was generally present; this was generally limited to the ankles, and resembled œdema, but the swelling was harder, and did not so readily pit upon pressure; it was also accompanied by increased heat of surface and pain, and the skin was studded with spots and patches of purpura. Although the swelling was usually limited to the ankles, it sometimes engaged the entire limb from the groin downwards. In one case where the swelling was limited to one side, the limb presented many of the characters of phlegmasia dolens; the patient was a female, too, and had been confined a short time previous to its setting in.

*Debility.*—Debility was an early and a constant symptom; at first it consisted merely in a disinclination to exercise, and the patient was easily fatigued. As the disease advanced, the patient became so weak as to be incapable of moving about, or of making almost the slightest exertion, and he was usually further incapacitated, owing to the swelling and stiffness of the hams, or to the œdematous swelling of the lower extremities.

*Pains resembling rheumatisms.*—Pains referred to the bones or joints, resembling those of chronic rheumatism, were common; in some instances they were the first which attracted the patient's attention, and they were usually supposed by him to be rheumatic. They set in usually before any spots of purpura appeared, but the gums, if examined, were always found to be engaged at the same time.

*Countenance.*—The countenance was always characteristic, particularly when the disease was at all advanced; it was then somewhat bloated and anemic; the cheeks and lips being blanched, with a yellowish tinge in the skin, at the same time being more or less expressive of anxiety. Sometimes the cheeks were much swollen, the patient was unable to articulate, and resembled a person suffering from severe toothache.

*Palpitation: Dyspnœa.*—In few of the cases which I have met with were palpitation or dyspnœa much complained of by the patient. The action of the heart was usually somewhat more rapid than natural, and the pulse was small and feeble. No bruit de soufflet was ever audible on auscultation over the large arteries, nor was bruit de diable ever heard in the viens of the neck, though, from the anemic appearance of the person, it might *a priori* have been expected.

*Hemorrhages, &c.*—No hemorrhage occurred in any patient under the author's care from any part of the alimentary canal; the bleeding was almost confined to

the gums; in one patient, a female, epistaxis occurred twice; in another the disease set in with menorrhagia, which yielded to the ordinary remedies. No patient presented ulcers upon the extremities or other parts, such as have been described by Lind and the older writers upon scurvy.

*Appetite: state of the bowels.*—The appetite in almost every case was good, and remained so all through; the tongue was usually clean, but pale, and the bowels were generally regular.

In reference to the causes of the epidemic, the author remarks that the subjects of the preceding cases appeared all to have had a sufficiency of bread; others had meat in addition, with sometimes wine or porter; none suffered from an absolute deficiency of food; but all agreed in not having used fresh vegetables from the period of the failure of the potato crop of last year. It is clear, therefore, that the cause of the present epidemic may be traced to the absence of the potato from the dietary of the poor; and it is equally clear that a diet of bread, with or without meat or broth, is incapable of preserving the body in health, and tends to develop scurvy; while we know, from long experience in this country, that a diet consisting solely of the potato is capable of affording sufficient nourishment, and of preserving the body in perfect health.

Now, he continues, the potato is placed by theorists nearly at the bottom of the list in the scale of articles of nutrition; indeed it has been assumed to consist of little besides water and carbon. According to the Liebigian theory, carbon, which is a large constituent of fat, but contributes hardly anything to muscle or bone, abounds in the potato, whilst the constituents of bone and muscle are abundant in peas, beans, wheat, oats, barley, and rye; *ergo*, the latter are much superior to the former as articles of food for the labouring population; and philanthropic individuals have calculated that an Irishman who consumes daily ten pounds of potatoes would gain more nourishment and strength from a few ounces of peas or beans. Indeed, if all we read about nitrogenized and non-nitrogenized articles of food were correct, the potato would have fallen into disrepute long since; and it ought by itself to be incapable of supporting the strength of a labouring man; although for more than half a century it has constituted the sole food of the great majority of the peasantry of this country, and we believe a healthier or a hardier population was to be met in few countries, contrasting sadly with their present altered aspect, after a diet for some months composed of more highly nitrogenized substances.\*

—The next communication on the subject of scurvy which we have to notice is one of a very elaborate nature, by Dr. Ritchie, of Glasgow, giving an account of the epidemic, as observed by him in the infirmary of that city.

The general symptoms of the disease, as mentioned by this writer, were such as suggested the idea of a low state of health, amounting often to a condition of absolute cachexia; the aspect was depressed and exhausted; there was a sallow, lemon-coloured, or leaden complexion, with sinking of the eyes, which were sometimes of a glossy whiteness, at others icteroid, and often encircled by a dark areola; the nose was pinched, the lips, inner surface of the cheeks, and the fauces and tongue were blanched, except where the latter were stained by ecchymoses, or occupied by ulcerations or chaps; the breath was offensive, the gums were livid, boggy, or spongy, notched deeply into conical processes between each pair of teeth, and swollen out often to a great breadth from the edge of the jaw, their connection with the whole circumference of individual teeth, being in general quite dissolved, leaving a gaping, flat honey-comb-like structure, in which these appeared as if loosely stuck, and which oozed out blood, more or less freely on the application of pressure. The patients were found either with decided emaciation or greatly swollen; and sometimes the arms and trunk might be observed covered with large folds of loose unhealthy skin, while the lower limbs were distended by swelling. In a few instances this tumidity was oedematous, but in general it was of a rocky hardness, the skin was indurated and thickened, every structure of the limb appearing as if impacted, and matted or glued together into a brawny solid mass. The skin was of various colours—sometimes of a scarlet red, more usually of a dark copper red, or of either a livid or a yellow, or of a

\* Dublin Med. Press, July 21, 1847.

yellowish livid hue; frequently also in the vicinity of variously sized blotches of these colours, brown coloured furunculi, small tumours containing only disorganized blood, rupia-like scabs concealing elevated tubercular ulcerations, the remains of former injuries having an acquired dark aspect, petechiæ, and, often, numerous small circular elevations or stigmata around the bulbs of the cutaneous hairs, of different shades of red, and accompanied by desquamation of the cuticle were observed. The joints and tendons, particularly those of the knees, were the most swollen, indurated, and painful localities. Sometimes the effusion was infiltrated into the cellular tissue around the joints only, and at others the articulations were occupied by it. In a few patients the periosteum covering the front of the tibia was elevated into an indurated, well-defined, and painful swelling, which was sometimes of several inches in extent, and constituted the most prominent symptom; but in the majority of the cases the greatest complaint was of the popliteal spaces and gastrocnemii muscles. The pain here was often very acute, accompanied by a sense of distressing distension on the patient assuming the erect position; and when the strength was such as to permit of walking, which was in many not the case, this exercise was in general rendered impossible by the pain; or, when this was relieved, by the matting together of the fibres, or the adherence to their sheaths of the tendons of the muscles of the legs.

The mind was sometimes depressed and enfeebled: in two cases there was maniacal excitement; in another, dementia and paralysis. Timidity, vertigo and deafness were occasionally complained of, as also various neuralgic pains, attacking the head, neck, or loins.

In regard to the circulatory system, the heart's sounds were usually short and snapping; sometimes they had a ringing, metalloïd character: often there was an obvious prolongation of the second sound, and on some occasions, the first sound was either much or quite extinguished. Sometimes there was a soft systolic murmur over the aortic valves, and just as often the diastole was marked by a harsh, rough, and grating noise, which in some instances was heard also in the larger arteries. In many cases there was a loud, humming bruit in the external jugular; sometimes even when the cardiac sounds were good, there were violent throbbing, and a loud whirring noise in both the carotid and subclavian arteries, while in others there was only a short blowing sound, annihilated often on the gentlest pressure of the stethoscope, to be heard in the vessels of the neck. The pulse varied from 60 to 144. It was always easily accelerated, and sometimes it was so weak, that it could not be numbered either at the wrist or inner ankle, and in such cases the systole of an artery even so near to the centre of the circulation as the femoral, was found to be appreciably behind the diastole of the heart. The larger arteries had in some individuals much of the visible impulsive throbbing, which appears to indicate in other circumstances, as in regurgitation through the aortic valves, a want of the due distension of their walls. The peripheral capillaries, also, everywhere, unless in the congested portions of the surface, were empty at least of red blood, and both this and the unusual action of the arteries might be seen at the same time with a comparatively shrunk, flattened state of the cutaneous veins. There was often in such, and in the exhausted patients generally, a disposition to syncope on their getting out of bed. The tract of the larger vessels of the limbs, and situations which were most dependent, or which were much exposed to pressure, were the most frequent seats of ecchymosis, and the nostrils and gums were the most constant sources of hemorrhages, which sometimes were both frequent and profuse.

There were no very marked symptoms affecting the respiratory system in Dr. Ritchie's cases, excepting in those in which hemoptysis took place.

In respect to the lesions of the digestive system, the tongue was commonly red or violet coloured, moist, and very clean; in other instances it was flabby and bloodless—sometimes it was tender, and in others again it was chapped and disposed to bleed. There was in general some pyalism, and the tongue was indented on its sides, and the swelling of the parotids and of the gums gave the patient the look precisely of a mercurialized person. The saliva was usually acrescent. There was often extreme thirst, the appetite was almost uniformly good, and it was not uncommon to see it voracious. The belly was at times enlarged, and either meteoric or obscurely fluctuant. The bowels in a large proportion were



slow, but in some individuals, who were exposed to cold and wet before admission, there was diarrhœa; in others this symptom arose after they had been put on a full stimulating diet, and in both of these the abdomen was not rarely found shrunk and flaccid. Sometimes the dejections were pale or nearly white; but in others they were of a bright orange colour, and attended by bilious vomiting. In the diarrhœas brought on by treatment, the stools passed rapidly into fermentation, and had in this respect, and in their general aspect, a strong resemblance to those of well-fed diabetic patients. In some the evacuations were incorporated with blood; many complained of piles, and then the blood lay more on the surface of the excretions.

The urine varied in specific gravity from 10.10 to 10.28. In a few instances it was reported to have been bloody; in one it was alkaline immediately on being voided, but in no one of the many specimens tested was it found to be albuminous or abnormal in other respects. There was retention in one case. Amenorrhœa took place simultaneously in one woman with the first symptoms of the disease.

In reviewing the causes of the epidemic as far as they could be ascertained, Dr. Ritchie likewise found a deficiency of potatoes and succulent vegetables to be the most efficient: cold and other debilitating agents operating only as predisposing or auxiliary causes.

The author notices several distinct phases of the disease. One variety was distinguished by anemia, emaciation, diarrhœa, bloody stools, and dropsy, while the more distinctive symptoms of scorbutus were wanting. A second group was characterized by anemia, often by diarrhœa, rapidity of the pulse, epigastric pain or oppression, great general distress, an uricated crimson efflorescence on the skin, petechiæ, and hemorrhages. A third by pains most commonly along the course of the nerves, but at others situated in a bed of muscle, as the gluteal; the cases having a close resemblance sometimes to general rheumatism, and, at others, to ischio nervosa, morbus coxarius, or disease of the knee-joint; their true nature being manifested by the sponginess of the gums, a perhaps slight ecchymosis only, the inefficiency of ordinary treatment, and the good effects of a full diet. And, lastly, the more ordinary form, in which affected gums and legs were the prominent symptoms. These subdivisions of the complaint had a conspicuous generic community with one another in their history, exciting cause, general aspects, and indications of treatment; but they appear to have arisen, each of them, under some distinctive combination of circumstances from which they had derived equally remarkable specialities.

The indications of treatment which the author pursued were, first to restore the general vigour and health consistently with the particular circumstances; and, second, to attempt the removal of the local complications, such as the hemorrhages and inflammations, on general principles, modified, of course, in every case by the character of the general health.

In the first form of the epidemic, the successful treatment of the cases was very hopeless. They were the product of long deprivation of adequate food and clothing, and not only resisted curative means, but were often injured by them. The most suitable diet was one of milk, with the addition of some light farinaceous substance, of one or two eggs daily, or a small quantity of wine. After a day or two's use of some such food, it was not uncommon to find fever kindled up; and, should a more stimulating diet have been employed, severe diarrhœa. The former effect was attempted to be removed by restricting the patients to weak tea, and toast, or panada; and the latter by varied remedies. When the diarrhœa was more simple, a couple of ounces of the dried root of the *tormentilla erecta* boiled slowly in two pints of milk and one of *aqua calcis* to a pint, was used daily. In similar cases the *infusum hamatoxyli* alone, or having the tormentilla added, was employed; and along with these as much even as three grains of the sulphate of iron every four hours, was given, with some aromatic, in a few instances with marked benefit; and in some other cases five or more grains of the sulphate of zinc three times daily, effected at least a diminution of the purging. In many patients with or without bloody stools, the sugar of lead, to the extent of about a scruple daily, was given for sometimes a couple of weeks continuously, without any bad effect or manifestation on the gums; and, in general, also with only

limited good effect. The various preparations of catechu, kino, and opium, were also used, but the latter sparingly, as stupor was induced by even small doses. In all the cases, the tendency to congestion of the organs was sought to be obviated by the use of flannel coverings, warm fomentations, hot mustard pediluvia, and on a few occasions by the short application of blisters to the abdomen. When acute hemicrania, threatening, as was believed, some effusion on the brain, presented, blisters were used; when dullness on percussion, thoracic pain, or dyspnoea, seemed to indicate congestion in the lungs, dry, and in rare cases, moist-cupping and sinapisms were employed; and, when the most prominent symptom was dropsy without any bowel affection, very striking amendment ensued on recourse being had to stimulating diuretics, as gin and squill, with a nutritious diet, and bandages to the limbs and abdomen.

In regard to the treatment of the second form of the epidemic, or the more purely hemorrhagic febrile variety the author has little to say. He had three cases only under his own treatment which could be held to belong to this category.

In the rheumatic form the use of repeated blisters was sometimes necessary, with which were conjoined quinine, cod-liver oil, and a full animal and vegetable diet.

The fourth, or more ordinary form of the complaint, was treated by regulated diet, with lemon juice or citric acid, and constant fomentation of the affected limbs. The period of recovery varied from a fortnight to a month.\*

—Dr. Curran, who gives the history of scurvy as it appeared in Ireland, also recognises four principal groups, each offering certain distinctions.

In the first there was extreme pallor and anxiety of countenance, with dry and cool skin, injected or spongy gums, and alveolar margins marked with a blue line, as from the effects of lead. There were also nodular indurations in different parts of the muscular system, especially on the calves of the legs and back of the thighs. The patient complained of constant pains aggravated at night; epistaxis was frequent, the bowels and pulse being natural.

The second group differed from the above only in exhibiting large, yellowish red or black and blue discolorations of various sizes and in various spots, chiefly over the ankle-joints, calves of the legs, popliteal spaces, and patellæ.

In the third class the anxiety and pallor of the countenance were extreme. The integuments were flabby and œdematous, the gums spongy or bleeding, or rising as black fetid granulations above the level of the teeth. The extremities, and, to a less extent, the body also, were covered with petechial spots. Ecchymoses and patches of various hues also appeared on the front of the leg, ankle, ham, inside of the thigh, buttocks, knees, and abdomen. In some cases the joints were enlarged and fluctuating. In the advanced stages, dysentery and melæna not unfrequently occurred, the urine was high-coloured, and epistaxis was frequent.

The fourth group was chiefly distinguished by the preponderance of neuralgic pains in various parts in succession. In this group, also, the skin was dry, and the gums spongy and dark, but the breath was never fetid, and the pulse seldom accelerated.

Dr. Curran next analyses the particular symptoms of the disease seriatim.

1st. *State of the gums, &c*—A diseased state of the gums was one of the most constant symptoms, being absent in four cases only. Sometimes the gums were found pale and bloodless. In two cases profuse salivation existed. The fetor of the breath was not constant.

2d. *Ecchymoses, petechiæ, &c.*—These phenomena were never observed on the head, and most commonly occupied the lower extremities. The most frequent appearance was that of a dark blue discoloration round the ankle joint. Ecchymosis sometimes appeared suddenly, preceded by pain. The discoloured portions of the integument were always of a higher temperature than the healthy parts.

3d. *Hemorrhages.*—Epistaxis occurred in at least half Dr. Curran's cases; it was met with in all stages of the complaint. Hemorrhage from the kidneys and bowels was rare, and was noticed only in old and debilitated subjects. Hemorrhage from the lungs and stomach was never seen.

\* Edinb. Monthly Journal, July and August, 1847.

4th. *Pains* were observed in almost every case, and were increased upon the patient's assuming the erect posture. The most frequent localities of the pains was the calves of the legs, heels, and ankle-joints. The pain in the back so constantly noticed in Dr. Shapter's cases was scarcely ever met with.

5th. *Digestion*.—The digestive powers were, in the commencement, uninjured. The bowels natural; in advanced cases diarrhœa was present.

6th. *Circulation*.—Pulse feeble, *bruit de soufflet*, though carefully sought for, was only discovered in two instances.

The etiology of the disease forms the next subject of consideration. The author distinctly shows that in his patients want of milk could not have been the efficient cause, as it was used in considerable quantities at the time of seizure and for some time previously. The active causes he supposes to be humidity, inactivity, and, more especially, deficiency of succulent vegetables. He shows that in four-fifths of his cases, at least, the diet had been bread, with tea or coffee, and in no single instance could he discover that green vegetables or potatoes had formed part of their dietary.

The *diagnosis* of scurvy and purpura, the only disease with which it can be confounded, will be found among our extracts. (Art. 5.)

*Treatment*.—The beneficial influence of lemon-juice was most marked in Dr. Curran's cases. The quantity given was half an ounce three times a day. A good and cheap substitute for lemon-juice was found in nitrate of potash and vinegar. As a local application to the mouth, the nitrate of silver in substance, tinct. ferri sesquichloridi, solution of chloride of soda, and tincture of rhaiany, were all used with good results, more particularly the latter.\*

The above communication, by Dr. Curran, is the last which we are called upon to notice as emanating from British writers. It remains to give a brief account of investigations upon the same subject by continental observers.†

—M. Fauvel has narrated the history of scurvy as it recently appeared at the Salpêtrière. The patients were all of an advanced age, the youngest being 69, the oldest upwards of 80. They had all been previously in good health and well fed. The symptoms and treatment were similar to those observed in this country. The most interesting portion of M. Fauvel's memoir undoubtedly consists in the analysis of the blood, which he details at some length, in accordance with the experiments of Becquerel and Rodier, and which distinctly prove the correctness of the investigations previously made by Mr. Busk, with respect to the quantity of the fibrin. On this point, however, we shall not dilate, as it will be more appropriately discussed in the Report on Pathological Chemistry. It will suffice in this place to mention that these analyses, if confirmed by further researches, must entirely subvert the predominant theories of scurvy, and the explanation of the symptoms upon the supposition of the existence of a dissolved state of blood: for, in fact, the blood, as has since likewise been ascertained by Andral, instead of exhibiting the dissolved state, coagulates firmly, and in no instance examined has the fibrine been deficient: but, on the contrary, in the excess. Though not immediately connected with the subject, it may also be mentioned that another fact elicited by the examination of scorbutic blood is that the albumen may be diminished to a great extent without the supervention of dropsy, thus opposing another theory of M. Andral.‡

—M. Marechal (de Calvi), in a communication to the Academy of Sciences, refuses to acknowledge the justice of the conclusions against the older theory derived from the excess of fibrine. He states that in most cases of scorbutus there is more or less local inflammation, to which this excess is due, and that this is especially the case when hemorrhagic infiltration takes place in internal organs, the extravasated blood exciting inflammation as a foreign body.§

In other communications contained in the French journals, an analogy of causa-

\* Dublin Quarterly Journal, Aug. 1847.

† After the above was written, we have seen a paper by Dr. Anderson, of Glasgow, in which he endeavours to reconcile the conflicting opinions respecting the etiology of scurvy. We can do no more, on the present occasion, than state that the communication may be found in the Edinb. Monthly Journal for September.

‡ Archives Générales, t. xiv. See also Prov. Journal, Oct. 6, p. 552.

§ Gazette Méd., No. 34.



tion and pathology between scorbutus and typhoid fever is sought to be established, but upon no satisfactory grounds. The question is decided in the negative by the difference in progress of the two diseases, and in their treatment: scorbutus being of indefinite duration, and cured almost to a certainty by lemon-juice; typhoid fever having a definite course, and being quite uninfluenced by that, if not by all other treatment.\*

### § II.—Zymotic Diseases.

2. *Fever, Typhoid*.—*Mercurial Treatment of*.—As long ago as the year 1812, M. Serres advanced the theory that the typhoid fever of his country was a true exanthema, and that the intestinal lesions of the fever bore to each other the same relations as the cutaneous eruption and the febrile disturbance in variola and other eruptive fevers. This idea, which he has subsequently reiterated at various times, has led him to the conclusion that the mercurial treatment might prove abortive of the typhoid disease, as it is seen to be of the variolous eruption, and accordingly, for the last three years, relied upon the internal and external use of mercury as the most efficient treatment.

The form of mercury used internally by M. Serres is the black sulphuret; externally the common mercurial ointment is employed. The dose of the former is from four to six grains, three or four times a day, and the treatment is continued until signs of approaching pyalism show themselves, when it is abandoned. The conclusions which he draws from numerous observations are thus stated by M. Serres:—1. The fever and headache are evidently influenced by the second or third day of the treatment. 2. The pulse falls below the mean. 3. No ataxic effects have been witnessed. 4. The quantity of *Æthiop's* mineral required to produce these results has not exceeded 50 grains. 5. Slight pyalism only was induced. 6. Convalescence was fairly established from the eighth to the fifteenth day.†

[The mercurial treatment of fever is no novelty in this country, but forms the staple of a large portion of the empirical physicians of the present day. If, however, any faith is to be placed in the chemico-pathological researches of later times, the exhibition of mercury to affect the system must be erroneous practice.]

3. *Measles*.—A pamphlet has been published by a military surgeon, M. Levy, on measles in the adult, from which we are led to the belief that the occurrence of this exanthema after puberty is a more common event than is generally supposed. The cases upon which he has constructed his memoir were witnessed in the Clinical Hospital of Metz, and were 120 in number, three of these only being under 18 years of age. The memoir, though elaborate, is without special interest.‡

4. *Erysipelas*.—*Separation of the entire Scalp from*.—In a case under the care of M. Velpeau, the entire pericranial cellular tissue became infiltrated with pus, as a consequence of phlegmonous erysipelas, and, in spite of repeated free incisions, nearly the whole scalp sphacelated. Unlike what might have been expected, there was very trifling exfoliation, and the surface soon granulated. The restored scalp is described as being wrinkled, as if too large for the head.§

### § III.—Diseases of the Nervous System.—

5. *Insanity*.—In a work recently published by Dr. Seymour, entitled "Thoughts on the Nature and Treatment of several Severe Diseases," the subject of mental derangement occupies a conspicuous place, chiefly in reference to the curability of certain forms of it by small and repeated doses of narcotics. The preparation preferred and generally used by the author is the acetate of morphine in solution, beginning with a quarter of a grain every night, increased after a week to half a grain, and steadily persisted in. The form of mental alienation in which the treatment is most beneficial is that of melancholia and suicidal mania, of both of which many successful cases are reported. It is also referred to as a valuable

\* Gazette Méd., No. 29.

† Ibid. Nos. 33, 34.

‡ Mémoire sur la Rougeole des Adultes, Svo. Paris, 1847, p. 48.

§ Journ. de Méd. and de Chirurg., and Month. Journal, Sept.

recourse in puerperal mania, particularly when used in connection with the tepid bath.

Another point much insisted upon by Dr. Seymour is the connection between insanity and pulmonary disease, and he gives us to understand that in several cases, he had prognosticated such a termination from the obstinacy of the melancholic symptoms.

—In the last Report of the Commissioners of Lunacy much important information is accumulated respecting the treatment of insanity. The great injury which follows the use of the lancet in mania is almost universally allowed by the medical attendants of lunatic asylums, to whom the Commissioners referred for information. Local bleeding is also sparingly employed, but in moderation is considered very useful. Emetics are all but laid aside by the most scientific practitioners, or used only in small doses to obviate excitement. Purgatives are generally approved of.

Anodynes are now very extensively used, and with striking benefit: but some discrimination, however, is necessary in their employment. Baths are also well reported of, especially the tepid and douche.

In the treatment of melancholia there seems to be little difference of opinion. Most of the medical officers who answered the inquiries of the Commission agree in directing attention to the alimentary canal, and are of opinion that the cause of the disease is often to be sought in disturbances of the digestive organs. They all likewise urge the necessity of regulated exercise in the open air, cheerful society, &c.

Epilepsy connected with insanity is almost universally allowed to be incurable, as is also the general paralysis of the insane. In the latter Dr. Sutherland relies upon counter-irritation and mercury, and Dr. Fox upon electro-galvanism.

The Commissioners, in the conclusion of their Report, justly lay great stress upon the moral treatment of the insane.\*

6. *Use of Ether Inhalation in Mania.*—In the licensed lunatic wards of the Marylebone Infirmary, Dr. Boyd has tried the inhalation of sulphuric ether in four cases of mania, one chronic and three acute, with benefit. The tranquillizing effect was produced at various intervals of from two to ten minutes; at a time when the patients were unusually violent. They all appeared to become intoxicated, but before this effect was fully induced, their anger subsided. The ether was administered by means of a sponge.†

7. *Tetanus.*—A case of tetanus is reported by Mr. Chalmers, in which recovery is referred to the exhibition of ether, but it must be remembered that the symptoms were never very severe, and that the case differed from the ordinary course of the disease, especially in the length of time which elapsed between its threatened and real attack, and in the persistence of rigidity of the limbs three weeks after the spasms had ceased.‡

In another case, related by Mr. Bransby Cooper, in his *Surgical Lectures*, the spasms were evidently relieved by the ether, and much of the patient's misery thereby alleviated: but he died nevertheless.§

8. *Hysteria.*—In this disease, also, ether inhalation has been beneficially employed. Mr. Wilkinson reports a case in which hysterical symptoms were subdued by it after resisting every species of treatment for four days.||

9. *Cerebro-spinal Meningitis.*—An epidemic of a fatal malady, similar in all respects to the disease described by Dr. Darby, as it appeared in Ireland, and by M. Rilliet, as it occurred at Versailles (see Half-yearly Abstract, Vol. III., p. 151), has recently been witnessed in America, and described by several American physicians; among whom we may name Dr. White, of Whiteville, and Dr. Hicks, of Vicksburg. The latter writer states that the chief symptoms were muttering delirium, restlessness, and eventually frantic wildness, followed on the second or third day by symptoms of tetanus, the spinal muscles being strongly retracted, with loss of power in one or other side of the body, and violent spasms excited

\* Fourth Report of the Lunacy Commissioners, 1847. Noticed in *Med.-Chirurg. Rev.*, October.

† *Lancet*, Aug. 14.

§ *Méd. Gaz.*, Aug. 6.

‡ *Prov. Journal*, June 30.

|| *Lancet*, July 3.

by touching the lower extremities. In many of the cases petechiæ of large size appeared on various parts of the body, within six hours of the attack. These declined on the fourth or fifth day, if the patient lived so long. The duration of the disease was from five to thirty days, the mortality fully one half. No treatment appeared to have any influence.\*

The same disease has likewise been recently committing great ravages in Algeria, more particularly among the Zouaves, a regiment much exposed to heat and fatigue. M. Bisséron, finding the inutility of ordinary treatment, was induced to try the inhalation of ether; by which means he affirms that he saved eight patients in succession.†

10. *Sciatica*.—This disease is well described in the last chapter of Dr. Seymour's work. A condensed statement of his views of its treatment appears among our Abstracts (art. 14).

#### § IV.—Diseases of the Respiratory System.

11. *Auscultation*.—*New Stethoscopic Sign*.—Dr. Cristophe professes to have discovered a new stethoscopic sign, intermediate between ægophony and bronchophony, and which, without much attention to physiological rules, he has christened "ægony." He says that for about fifteen years he has remarked, about a score of times, a resonance of voice intermediate in character between well-marked bronchophony and ægophony. It occurs as a trembling vibration of the voice, but short, feeble, and not prolonged, as in ægophony. One may form an idea of the sound by dividing that of ægophony into two parts, and by taking account only of the first part, by abstracting the second; that is to say, by omitting what constitutes the final characteristic tone (timbre) of the bleat of the goat, or of the voice of Punchinello. He has called this sign ægony, because it is a diminutive of ægophony, and that it may be considered as part of that sound. Ægony is characterized by a short vocal resonance, somewhat tremulous when monosyllables are articulated. This character is always the same, in whatever position the patient is placed; the sound does not change to ægophony, to revert again to ægony. It increases and diminishes, but insensibly, and that in a considerable interval. It may disappear upon cure; most often it remains a long time stationary; but when the patient is about to succumb, ægony is altered by the sounds which attend the breaking up of the tubercular matter.

This symptom has also its distinct pathological and anatomical significations. Ægony is always heard between the scapulæ, at their inner borders, and especially at the middle or upper third of the latter. The author has often found it stronger on one side than on the other, and more on the right than on the left side. It almost always coincides with a painful spot, as large as a shilling, situated at the upper third of the inner border of one or the other scapula, and especially of that which presents the ægony in the most marked degree. This painful point is fixed and permanent, or rather it is liable only to be suddenly altered by certain movements of the scapula and of the arm.

Ægony indicates an old-standing pleurisy, and also a latent but actual chronic pleurisy, such as sometimes precedes tubercular disease. It is always accompanied by thickening of the pleura, and by adhesions of the pleuræ, with strong bands and false membranes.

Examination after death has mostly revealed tubercular deposit in the corresponding part of the lungs which are indurated, and sometimes traversed by ramifications of the bronchi, deformed and flattened. On one occasion the stethoscope detected tubular respiration over a space the size of a shilling, and several times deep cavernous breathing was perceived, and almost always autophony. This last phenomenon is explained by the fixed and resisting opposition that the indurated lung offers to the vibrations of the voice of the auscultator, whilst the thickening and hardening of the pleura produce ægony by the tremulous resistance thence opposed to the bronchophonic vibrations of the patient.

The conclusions at which M. Christophe arrives are—1st, when ægophony is present an effusion, either disseminated or collected, always exists; 2nd, in

\* Philadelphia Med. Exam., Aug., 1847.

† Gazette Méd., 26 Juin.



simple ægony such never exists. Thus the latter signifies a chronic, dry, and pseudo-membranous pleurisy, accompanied generally by a subjacent induration.

Most of the subjects in whom the author has met with ægony were all affected by gastro-intestinal engorgements, subject to cold and shivering, and liable to get colds. He has also marked in them a pale and somewhat yellowish complexion, especially about the nose and lips, shrunken features, a dry cough, with sometimes the expectoration of whitish pellets of mucus, thick and shining.

These observations the author has made known, that their truth may be tested, and that their value in diagnosis may be verified.

Upon this specimen of auscultatory dilettanteism the editor of the "Lancet" observes:

"The stethoscopic sign which M. Christophe has made known seems to be, certainly, rather finely drawn. Every person who has attentively examined the chest in disease, must have often experienced some difficulty in distinguishing between bronchophony and ægophony, by meeting with sounds which might almost indifferently be referred to either; but we have hitherto heard of no one who has developed a new sound from these mid-sounds, and named it. Yet we may suppose some of them may be pretty constant in certain conditions, and characteristic of those conditions, as M. Christophe represents. Allowing the sound of ægony to be a distinct sign, our diagnosis must no longer be confined to noting bronchophony, in all its shades, from ægophony, but we must take this new sound, ægony, standing midway between the two, and distinguish it from either—a task, we believe, not very many will attempt, and one requiring nice ears and nice discrimination, and, withal, having no very direct bearing upon therapeutics."<sup>2</sup>\*

12. *Larynx, Follicular Disease of.*—This term is applied by Dr. Green (Treatise on Diseases of the Air-passages. &c., New York, 1846) to a disease which has been but little studied in this country, although it is far from being of rare occurrence. It appears to have first attracted attention in the United States as a sequel to influenza, and attacked principally those who were in the habit of using their voice in public speaking, and hence was frequently observed among the clergy, and acquired the name of Clergyman's Sore Throat.

The disease, at its onset, consists in subacute inflammation of the mucous follicles of the fauces, and is then limited to the pharyngeal membrane. It soon, however, spreads to the larynx, and may even reach the trachea. It is described by Dr. Green as very insidious in its progress, and is characterized, in the first instance, by frequent inclination to swallow, as if an obstacle existed in the upper part of the œsophagus: at the same time a slight alteration is perceived in the tone of voice, with hoarseness, much increased after speaking. Sometimes there is slight soreness of the larynx, but seldom any cough. If the throat be inspected at this time, the pharyngeal mucous membrane will appear to be deprived of its epithelium, and the mucous follicles will be seen to be hypertrophied, and in long-standing cases are filled with a matter resembling softened tubercle. At a still later period, when the glands situated at the root of the epiglottis and those of the laryngeal membrane become involved, all the above symptoms are greatly aggravated. The voice becomes more feeble and hoarse, and when the follicles contained in the mucous membrane which covers the vocal cords are invaded, is almost or entirely extinguished.

It is important to remember that the disease may arrive at this degree without giving rise to any symptom which is directly referred to the throat; the patient may have a teasing cough, and his breathing may be short, but he will not complain of the larynx. In some cases the disease closely resembles tubercular phthisis, of which the author relates a striking example; and in others it so far complicates that disease as to form an important element in its pathology. In this case the cough, dyspnoea, and other symptoms of phthisis are greatly aggravated, and the disease more quickly passes through its different phases than when follicular disease is absent. Dr. Green mentions one case of phthisis in particular, in which his treatment of the follicular disease tended materially to check the other.

We shall not follow the author through his remarks upon the causes of the follicular disease, but proceed at once to the treatment, which comprises the most, though not entirely original, part of the book. The practice for which Dr. Green has gained the greatest notoriety, and not a little abuse among his own countrymen, consists in the application of a strong solution of nitrate of silver to the interior of the larynx, the base of the epiglottis, or what other portion of the laryngo-pharyngeal membrane may be implicated. The method of applying this solution, which is of the strength of from two to four scruples of the nitrate to the ounce of water, is by means of a globular piece of sponge, the size of a small cherry, fixed to the end of a curved whalebone like a probang. With this the aperture of the glottis is passed, but only after some manipulation, accustoming the part to the contact of the instrument by applying the solution to the outside of the rima glottidis for several days in succession. In this way, Dr. Green affirms that the exquisite sensibility of the glottis is overcome, and the instrument may then be passed through the glottis without difficulty. The use of the solution is to be continued some time, to guard against a relapse.

13. *Acute Laryngitis*.—Dr. Green also applies the solution of nitrate of silver in the acute diseases of the larynx, and mentions a case in which, although suffocation was imminent, it was followed by marked success. A large quantity of viscid mucus was discharged, and the patient speedily recovered.

14. *Phthisis Pulmonalis*.—We have already incidentally alluded to the mitigation which the symptoms of phthisis received by attention to the follicular disease of the larynx and pharynx, with which it is frequently associated. The same subject is more fully discussed by Dr. Green, in a subsequent part of his work, and the value of the treatment is urged upon the evidence afforded by twenty-five cases; one of which we transcribe:

"A gentleman, some months before coming to New York, lost his voice entirely, and had a cough, and was hoarse several years previously. He had also had several attacks of hemoptysis; was emaciated, and so feeble when he arrived that he could not walk without aid. He was suffering from severe cough, had great dyspnoea, and free expectoration of purulent matter. The throat was studded with granulations or enlarged follicles. A dulness on percussion over the right lung, with absence of respiratory murmur, with the above rational symptoms marked the case as one of confirmed phthisis, and such it was admitted to be by several experienced auscultators."

"Applications of a concentrated solution of the nitrate were made to the throat and into the larynx for about two weeks. At the end of this time his cough and dyspnoea were so much relieved, and his strength increased, that from not being able to walk any distance without aid, he on the twelfth day of treatment went a distance of three miles without inconvenience." This patient subsequently left New York, and was in a favourable condition a year afterwards.

15. *Cod-liver Oil in Phthisis*.—The beneficial effects of this animal oil in consumption, though undoubted in certain cases, appear to be but little known to the generality of the profession in this country. That it is capable of effecting more good than any other medicine with which we are acquainted we have convinced ourselves by a considerable experience, which it is our intention at some period to notice more at length. In the meantime we are able to give the testimony of Dr. Madden, of Torquay, which appears in a paper recently published by him, "On some Points connected with Tubercle of the Lungs." He states that his experience of cod-liver oil in phthisis is extremely favourable; he has witnessed a steady improvement under its use, the cough becoming less troublesome, and the expectoration less copious; the emaciation being arrested, and even, in many cases, a decided amount of flesh being gained. A few cases are related in support of these assertions; but it is to be regretted that they lose a portion of their value from a want of precise stethoscopic information.\*

16. *Gangrene of the Lung*.—A case is related by M. Leuret, in one of the French journals, which shows that the fetor of the breath, which is so diagnostic of the disease, is sometimes absent altogether, or is only to be perceived when the patient coughs after taking a longer breath than usual. The patient alluded to was a

\* Med. Gazette, Sept. 17, 1847.

lunatic, a class of patients in whom it is well known that the most serious disease may be so masked as entirely to escape observation during life. In the present case the fact of the destructive inflammation existing in the lungs would have been quite overlooked but for the accident of the patient coughing in the face of the physician. After death a large gangrenous abscess was found in the lower lobe of the right lung.\*

#### § V.—*Diseases of the Circulatory System.*

17. *Aortitis*.—In the elaborate work of Mr. Crisp on the Diseases and Injuries of Blood-vessels,† inflammation of the aorta forms the subject of the third chapter. The author admits the uncertainty which surrounds the diagnosis of the affection, and seems disposed to consider that there are no undoubted signs by which it can be ascertained. This difficulty chiefly arises from the frequency with which aortitis is associated with affections of the heart itself, and the fact that its symptoms are therefore merged in the more urgent phenomena of the latter disease. The only morbid appearances which the author considers as indicative of inflammation of the aorta are redness and a pulpy appearance of the internal and middle tunics, with a facility in detaching the serous membrane. The treatment recommended is vigorously antiphlogistic.

In connection with acute aortitis, the author alludes to a contracted state of the aorta, which has been described by Dr. Craigie as taking place at the time of the closure of the ductus arteriosus. A table of seventeen cases of this appearance is given, displaying the curious fact that many of the individuals suffered but little inconvenience from the abnormal condition of the vessel.

In discussing the important subject of inflammation of the arteries of the extremities, the author proves satisfactorily that it is the immediate cause of senile gangrene, and supports his opinion by the detail of numerous cases. This matter, however, we are compelled to pass by, as more directly appertaining to our Report on Surgery.

18. *Aortic Valves, Diseases of*.—The following are the chief morbid alterations of these valves which Mr. Crisp has met with in his own practice and in the examination of museums:

1st. Acute inflammation, shown by redness and deposit of soft lymph; generally coincident with endocarditis.

2d. Thickening and inflammatory adhesions, by which two or more valves are agglutinated.

3d. Cartilaginous, atheromatous, calcareous, and osseous deposits.

4th. Vegetations, sometimes solitary, more frequently in masses.

5th. Retroversion and inversion of the borders.

6th. Enlargements and dilatations.

7th. Ruptures and perforations.

8th. Partial dilatation; this very rare.

Most if not all these varied lesions are rightly attributed to the effects of acute or chronic inflammation. In his account of the symptoms of disease of the aortic valves, Mr. Crisp merely follows the description of previous writers.

A fact mentioned by the author, which is worthy of remembrance, is that persons with only a trifling amount of disease of these valves may die suddenly after a full meal. This he explains by the pressure of the full stomach upon the descending aorta, and consequent interference with the circulation. Three cases are given in illustration of this event; and two others, which point out the danger of administering digitalis under similar circumstances.

19 *Internal Aneurism*.—The chapter on aneurism, by Mr. Crisp, is a very complete disquisition on the subject. We give below extracts of the most interesting matter which it contains.

*Situation*.—Of 243 cases of internal aneurism, 175 were of the thoracic aorta, 59 in the abdominal portion of the vessel, 2 in the pulmonary artery, and 7 in the cerebral. Of these, 198 were males, 45 females.

\* Gazette Méd., 4 Sept. 1847.

† Treatise on the Structure, Diseases, and Injuries of the Blood-vessels, Lond. 8vo, 1847.



*Age.*—Between ten and twenty, 3; twenty and thirty, 23; thirty and forty, 82; forty and fifty, 62; fifty and sixty, 33; sixty and seventy, 13; seventy and eighty, 4; eighty and ninety, 1; not stated, 22.

20. *Thoracic Aneurism*.—*Symptoms and Diagnosis.*—Mr. Crisp speaks of the great obscurity of the signs of thoracic aneurism. These depend on the situation, size, and pressure of the tumour on surrounding parts, and upon the condition of the heart. When seated in the ascending aorta, the pulsation is heard on the right side of the sternum, and the tumour mostly projects in that situation. When situated in the arch, and ascending, various parts may be pressed upon, as the lungs, trachea, bronchi, recurrent laryngeal nerves, &c., producing the various symptoms of dyspnœa, orthopnœa, hæmoptysis, loss of voice, &c. It may press on the œsophagus, causing dysphagia: on the vena cava and thoracic duct, producing engorgement of the pylorus; and, in the latter case, emaciation. Symptoms of indigestion are also present, and vague pains, which are not uncommonly mistaken for rheumatism. The character of the pulse varies according to the situation of the aneurism; if in the innominata or subclavian, the pulse of the affected side will be less distinct, and in some cases absent. Mr. Hodgson states that the pulse is often irregular; this Mr. Crisp denies, and when it is so he believes there is some coincident disease of the aortic valves. (Compare Abstract, Vol. I. p. 49; Vol. III. p. 49.)

*Physical signs.*—The physical signs of aneurism of the thoracic aorta are stated to be dulness on percussion, bellows-sound, single and double pulsation, diastolic murmur, purring tremors, wheezing respiration, &c., in various combinations; but these the author justly considers as inconclusive, since they are also to be met with in other states of the vessel or of the heart. The double sound which is mentioned by Gendrin and others is not to be depended upon, Mr. Crisp having met with it only once in ten instances of aneurism of the thoracic aorta. The author does not omit to state the important fact, that large aneurisms may exist without any abnormal bruit. Two such we have recorded in a former volume (Vol. III. p. 160).

*Terminations.*—The terminations of aneurism of the thoracic aorta are thus stated by Mr. Crisp, from an analysis of an extensive series of tables.

*Ascending aorta.*—Of 98 cases, 30 opened into the pericardium, 6 externally, 4 into the left pleura, 1 into the right, 3 into the pulmonary artery, 3 into the right lung, 3 into the superior cava, 2 into the œsophagus, 2 into the right auricle, 2 into the right ventricle, 1 into the left, and one into the trachea; 7 died from pressure on the trachea and right bronchus, 6 from effusion into the pericardium and pleura, 2 from phthisis, 2 from syncope, and 1 from each of the following causes; regurgitation into the ventricle, compression of the vena cava, compression of the pulmonary artery, apoplexy of the lung, pericarditis, hæmoptysis, and bronchitis; 4 died suddenly from unknown causes, and in 8 the cause of death was doubtful.

*Arch.*—In 48 cases of aneurism of the arch, 4 opened into the trachea, 2 into the pericardium, 2 into the œsophagus, 2 into the posterior mediastinum, 4 into the pleura, 2 into the bronchi, 1 into the pulmonary artery, 1 into the lung, 1 into the superior cava, and 1 externally; 12 died from pressure on the trachea, &c., 3 from suffocation, 2 from hydrothorax, and 1 from each of the following: pressure on the recurrent nerve, dysentery, apoplexy, rupture of ascending aorta; in 6 the cause of death unknown.

*Descending aorta.*—Of 21 cases, 8 opened into the pleura, 5 into the œsophagus, 2 into the left bronchus, 1 into the left lung, 2 died from pressure on the trachea and bronchi, 1 from apoplexy, and 1 from exhaustion.

*Treatment.*—Mr. Crisp advises small bleedings at regular intervals; but disapproves of digitalis. Belladonna and opiate plasters are useful.

21.—*Aneurism of the abdominal aorta.*—The diagnosis of this form of aneurism is thus laid down by Mr. Crisp. In abdominal aneurism, pain of an aching or tearing character is often felt. In abdominal pulsation, pain is seldom complained of. The sound in aneurism is generally a rough single bruit. In aortic pulsation there is seldom an abnormal sound. In abdominal aneurism the impulse is heaving and confined; in pulsation bounding and diffused. The age, sex, and circumstances of the patient will afford collateral evidence.

22. *Rigidity of the Arch of the Aorta.*—Dr. Bellingham calls attention to a condition of the arch of the aorta, which he states to be often mistaken for regurgitant disease of the aortic valves. This condition consists in rigidity and inelasticity of the walls of the vessel, with or without dilatation. His views with regard to the production of dilatation of the aorta are to the effect, that it is due to the regurgitation of the blood from the carotid arteries into the inelastic vessel, and not, as is commonly supposed, to the distending force of the left ventricle. The paper, which is one of much interest, terminates as follows:

1. Under certain circumstances the blood regurgitates into the arch of the aorta from the carotid and subclavian arteries, during the diastole of the ventricles.
2. Regurgitation into the arch of the aorta occurs whenever the coats of this vessel have become rigid and inelastic from previous disease.
3. That regurgitation into the arch of the aorta from the carotid and subclavian arteries is capable of developing a sound which has a great resemblance to the second sound of the heart, and is audible at the same period of the heart's action.
4. That a rigid and inelastic condition of the coats of the vessel, combined with roughness of the interior of the vessel, and slight increase of its calibre, is characterized by certain well-marked physical signs, which will enable it in the majority of cases to be readily diagnosed.
5. That the physical signs of this morbid condition of the arch of the aorta resemble those of valvular disease, and have probably often been mistaken for it.
6. That the form of valvular disease with which it is most liable to be confounded is a state of the semilunar valves of the aorta permitting regurgitation, which it resembles in a murmur accompanying the second sound of the heart, in the jarring pulse, and in the visible pulsation in the arteries; symptoms which heretofore were supposed to be pathognomonic of regurgitations through the aortic orifice.
7. That the morbid deposits which occur in the arch of the aorta are not the result of inflammatory action either of an acute or chronic character; neither can they be considered as the result of the natural degeneration which the tissues undergo in advanced life, but that they ought to be ranked among adventitious deposits.
8. That dilatation of the arch of the aorta is more frequently the result of regurgitation into this vessel from the large branches which come off from it than of the increased force with which the blood is propelled by the left ventricle, or than of any impediment to its passage through the remote or terminal branches of the aorta.
9. That our knowledge of the fact that regurgitation into the arch of the aorta occurs in cases where this vessel has become inelastic from disease, enables us to explain the cause of the *second sound heard in cases of aneurism of the arch of the aorta*, and to account for the second impulse felt where the aneurism forms a tumour externally.\*

23. *Coronary Arteries—Dilatation and Rupture of.*—Pathologists have investigated with great minuteness the various lesions to which the different parts of the heart are subject; but the diseases of the coronary arteries alone have not met with that attention which the importance of those vessels as the nutritive vessels of the central organ of the circulation demands. M. Aran, whose researches in connection with the cardiac affections we have previously had occasion to notice, has recently endeavoured to supply this deficiency in a paper published in the "*Archives G n rales*" (Juin 1847). He accounts for the slight importance which has been attributed to the diseases of the coronary vessels to the circumstance of their being generally associated with serious and extensive structural lesion of the heart, which have attracted attention, and to the exclusion of the former, and justly so in most instances, as they are secondary to the other and more severe lesions. There are, however, he observes, two pathological conditions of the coronary arteries, viz. dilatation and rupture, which in their isolated state offer materials for interesting consideration, as they may be the only cause of sudden death, and moreover offer a ready explanation of certain cases of rupture of the parietes of the heart itself. The author first alludes to

*Dilatation and Rupture of the Coronary Arteries.*—It would be imagined, from the small number of cases on record, that rupture of the coronary arteries is not a frequent event; but M. Aran regards the infrequency as more apparent than real, and thinks that many cases may have been overlooked either from the small size of

\* Dublin Med. Press, April 1847.

the dilatation, or, as has been before stated, from the preponderance of other cardiac lesions. In the instances which he has accumulated there were no symptoms to indicate prior disease; death was sudden, and the pericardium was found distended with blood.

*Dilatation—Rupture of the Cardiac Veins* is considered a still more uncommon lesion. The only instance which the author considers to be trustworthy is one recently recorded by Dr. M'Lagan (Abstract, Vol. II. p. 172), and this is not a case of primary rupture of the vessel, as takes place in varix, but was an accidental laceration, coincident with rupture of the muscular fibres of the ventricle. The case alluded to is not without parallel, as may be seen by reference to our Second Volume at the page indicated.

#### § VI.—*Diseases of the Chylopoietic System.*

24. *Diseases of the Œsophagus.*—Mr. Worthington has recently met with a case of "sacculated dilatation of the Œsophagus with stricture," which is of sufficiently rare occurrence. The patient, a gentleman æt. 69, had experienced slight dysphagia for three years, without material impairment of his general health. In January 1846 this symptom increased, and a stricture was discovered by the probang, opposite the cricoid cartilage. After death a pouch or bag was discovered proceeding from behind the Œsophagus and passing down in front of the vertebræ. Two-thirds of this dilatation were invested with muscular fibres proceeding from the constriction of the pharynx. The entire pharynx was much dilated. The stricture was composed of hypertrophied mucous and cellular tissue, and scarcely admitted a common-sized bougie. The author considers that early treatment by graduated bougies would in all probability have averted the fatal result.\*

25. *Diseases of the Stomach.*—The diseases of the stomach in general have during the past six months attracted some attention, having been chosen as the subject of the Croonian lectures by Dr. Budd;† they are likewise treated of, though in somewhat a desultory manner, by Dr. Seymour, in his work before quoted.‡ With these exceptions, however, the communications under this section are neither numerous nor important.

Of the lectures above mentioned by Dr. Budd, one of the most important and elaborate is that on chronic ulcer of the stomach, a condensed abstract of which we have printed in a former part of this Volume (art. 27). The lecturer also gives a complete history of the post-mortem softening of the viscus, the details of which are greatly enriched by the results of original investigations.

—Dr. Seymour, in his chapter on diseases of the stomach, thinks it preferable to descant upon individual symptoms, as something tangible and obvious, rather than to occupy the reader with a pathological dissertation properly so called. Upon this principle he first notices a symptom which occupies a permanent place in most diseases of the stomach, viz.—

*Pain.*—This symptom, he remarks, may arise from a great variety of causes, as for instance, distension with food. But it also occurs irrespective of this cause, under two forms, one, pain accompanied by heartburn, the other, pain alone. The first, Dr. Seymour believes to be excited by the presence of acid, and is readily removed by alkalies, combined with rhubarb and calumba. The other is best treated by a combination of bismuth and magnesia. If in such cases the bowels are confined, mercurial alteratives, followed by saline aperients, are recommended. When the pain resists this treatment, and from its obstinacy gives rise to a suspicion of organic disease, Dr. Seymour places much reliance on grain doses of opium twice or thrice daily.

Pain in the stomach, accompanied by pyrosis, is treated by Dr. Seymour by the pulv. kino c. in five-grain doses, and aloetic purgatives. A blister is sometimes premised.

Pain in the stomach is next considered as connected with chronic ulcer, of which fatal disease an accurate account is given; but nothing is mentioned which may not be found in Dr. Budd's lecture above mentioned (art. 27).

*Vomiting.*—The simplest form of vomiting described by Dr. Seymour, is that

\* Prov. Med. and Surg. Journal, July 28, 1847.

† Med. Gaz.

‡ Thoughts on Severe Diseases, Lond. 1847.



which occurs in pregnancy, and which is occasionally so severe as to threaten life. A case of this kind is narrated, in which the symptom was at length subdued by opium. Vomiting is also alluded to as symptomatic of cerebral disease, and as it occurs in hysteria, and as one of the accompaniments of rapid phthisis. In this latter disease, the author regards vomiting after coughing as symptomatic of "large quantities of matter locked up in the lungs."

Stercoraceous vomiting unconnected with hernia, or other intestinal obstruction, is occasionally witnessed, and Dr. Seymour notices three cases, one of which he reports at length. In this the vomiting, which had nearly exhausted the patient, was subdued by forcing the patient to swallow soda-water on every attempt to reject the contents of the stomach.

Vomiting of a peculiar dark green fluid is noticed by Dr. Seymour, as indicative of tubercular disease of the peritoneum. A rare kind of vomiting is also mentioned as depending upon contraction of the pyloric orifice; it occurs every two or three days, and the entire quantity of food taken in that time, is returned.

The last varieties of vomiting described are those symptomatic of renal calculus, and of the English and Asiatic cholera. In the English cholera, the symptom is generally suspended by two or three doses of calomel and opium.

26. *Peritonitis*.—A case in which the purulent effusion of peritonitis was spontaneously evacuated by an opening in the abdominal walls, is related by Dr. Aldis. The patient was a child, *æt.* 7.\*

27. *Intestinal Concretions*.—The following instructive case is recorded by Mr. Spry:—A young woman, aged 16, voided, with great pain, two large lumps of matter, the size of a pullet's egg, having a thin albuminous coating, by which their composition was concealed. After careful washing, these lumps proved to be masses of dyed wool of different colours, hair, worsted, cotton and linen rags, all compactly matted together. No information could be obtained which threw any light upon the manner in which these matters were admitted into the bowels; the only supposition was, that she swallowed them when a child. Previous to the expulsion of these substances the girl had been reduced to the last degree of emaciation, and exhibited a well-defined tumour just below the margin of the right ribs. As soon as the foreign matter above mentioned was expelled this tumour subsided, and the patient rapidly gained health and strength.†

—The "Monthly Journal" (September) contains a short paper "On some peculiar Intestinal Concretions," by Schlossberger, which is without particular interest.

#### § VII.—*Diseases of Variable or Uncertain Seat.*

28. *Gout*.—Dr. Seymour devotes the second chapter of his volume above mentioned to this subject. After a historical account of the disease, with some brief remarks upon its hereditary nature, he illustrates the three varieties, misplaced or irregular, atonic, and retrocedent gout, by appropriate examples. In respect of the treatment of gout, he observes that the modern practice differs but little from that of former days. He objects to blood-letting, which is in vogue among the French, as tending to prolong the paroxysm. Of colchicum the author entertains a high opinion, especially when given in small doses during the interval. One of the worst cases which he had ever witnessed was cured by the persistence in the dose of  $xv\text{m}$  every night for a twelvemonth. The preparations preferred by him are the wine of the root and the acetous extract.

In general, he further observes, he begins by a scruple of the wine of the root twice a day, and he also gives at night three grains of the acetous extract, with five of Dover's powder. If the bowels are confined he combines an aperient, as the extract of colocynth, instead of the powder.

In cases of old-standing gout, without hereditary taint, Dr. Seymour advises that the colchicum should be only given at night, combined with an opiate, and from fifteen to twenty drops of the liq. ant. potass tart., if febrile symptoms run high.

Dr. Seymour speaks well of the burdock (*Arctium lappa*), given in the form of decoction ( $\mathfrak{z}\text{ij}$  of the root to Oiss water).

\* Edinb. Med. and Surg. Journal, Oct., 1847.

† Prov. Med. and Surg. Journal, Sept. 8, 1847.

With respect to local applications in gout, Dr. Seymour enters into somewhat minute details, commencing with the "bootekins" of much celebrity, the valuable effects of which he satisfactorily accounts for by the fact that they confine the insensible perspiration, and therefore act as a poultice; they are applicable only to early gout, and, on the contrary, when the disease is of old date may greatly aggravate the pain.

Another subject upon which the author briefly touches is that of gouty concretions or "chalk-stones," as they are termed by the patient. For this symptom he has availed himself of the suggestion of Dr. Ure, and exhibited the benzoate of ammonia. The effect has been, he thinks, to arrest the depositions in their early stages.

29. *Diabetes*.—In our abstracts (arts. 34, 35) we have already noticed the most practical portions of two recent essays on this disease, one by Dr. Elam,\* the other by Dr. Rees;† we shall, in this place, briefly relate the views of each author on the pathology of the disease.

The source of the sugar, which is always justly regarded as the main question connected with the disease, is thus discussed by Dr. Elam.

In the natural state of the stomach after food, a certain quantity of fluid is secreted, of which the essential elements are a certain quantity of free acid, and a substance called pepsin. The two combined constitute the gastric juice. As long as these elements remain in due proportion, assimilation takes place, the azotized elements remaining as protein compounds, while, under the influence of the pepsin, the non-azotized elements are converted partly into fatty matter, and partly into lactic acid. For instance, the formula for starch  $C_{12}H_{10}O_{10}$ , that for lactic acid  $C_6H_5O_5$ , so that one atom of starch is resolved into two of acid. This, according to the author, is the general destination of the farina of the food. The lactic acid when formed unites with the free soda, forming lactate of soda, which is a natural constituent of the chyle.

In diabetes, an irritable state of stomach exists with exaggerated secretion of acid; and the author next inquires what would be the effect of this acid upon starch and cane-sugar, taking these as the types of the non-azotized elements of the food. This effect he states to be their conversion by the fixation of the elements of water into grape-sugar ( $C_{12}H_{22}O_{11}$ ). The change into lactic acid being prevented in the stomach as in the laboratory, by the presence of free acid.

It seems probable, according to the author, that the proximate cause of the disease consists in the disordered state of the gastric mucous membrane, leading to excess of acid secretions. This acts by converting the non-azotized elements of the food into grape-sugar. This theory he believes to be strengthened by the effects of treatment, the most efficacious being such as subdues the morbid irritability of the stomach. (See art. 35.)

—The theory supported by Dr. Rees, respecting the origin of diabetic sugar, is somewhat different. His belief is, that during health the conversion of starchy matters into grape-sugar is prevented by the presence of some principle, the effect of which is to cause their conversion into a substance intermediate between starch and sugar, to which the term *dextrine* has been applied. This conversion is effected, according to Mialhe, by a peculiar principle of the saliva, to which he gives the name of animal diastase, and it therefore appears that the saliva plays no inconsiderable part in the process of healthy assimilation. It is probable that the diseased action of diabetes consists in the absence of some principle in the saliva or stomach which corrects the action of the diastase, and prevents its producing a farther change of the dextrine into sugar. Whether this correcting principle resides in the gastric juice is not to be decided; but it is certain, not only that sugar is rapidly destroyed in the stomach during healthy digestion if introduced as sugar, but, moreover, that starch, after becoming dextrine, is finally converted into fatty matter instead of grape-sugar. (For Dr. Rees's views of treatment of diabetes, see art. 34.)

\* On some points connected with the History, &c., of Diabetes, Med. Gaz., Sept., 1847.

† Op. cit. pp. 70-144.

§ VIII.—*Diseases of the Urinary System.*

30. *Clinical Examination of the Urine.*—We have the opportunity of calling the attention of our readers to a small work recently published by Mr. Marckwick, intended as a Manual for the use of students in Urinary Diseases.\* It is strictly a compilation, and extracts largely from Dr. Golding Bird, Prout, Simons, and others, but more especially from the former.

The author must be admitted to have attained his object in presenting a convenient bedside companion; but it is one which will certainly suffer by a comparison with Dr. Bird's excellent treatise on the same subject. Its merits will be examined more in detail in our next chemical report, to which its contents more particularly belong.

31. *Morbus Brightii.*—The "Medical Gazette" of August contains a clinical lecture on this disease by Dr. Rees, but as it is but a repetition of the ideas previously expressed by that gentleman, (Abstract, Vol. II. p. 70, &c.,) we need not here give an analysis of its contents.

32. *Induction of Cystitis and Albuminuria by Blisters.*—M. Morel Lavallée has called attention to the effects of blisters upon the bladder. He describes the disease produced as "cystite cantharidien," and states that it is indicated by the presence of albumen in the urine, but in larger quantity than in Bright's disease. The albumen, he also states, may exist under three modifications:—1st, in solution; 2d, as a deposit at the bottom of the bladder; 3d, in the form of false membranes. There are no other symptoms of material consequence.†

M. Bouillaud has noticed the same thing as a consequence of blisters, and M. Vernois, who had experimented on the subject in consequence of M. Morel's communication, affirms, that in 26 men free from Bright's disease in whom blisters were applied, albumen appeared in the urine of 16.‡

§ IX.—*Diseases of the Skin.*

33. *Arsenic in inveterate Skin Diseases.*—We have at various times in our former volumes, had occasion to notice communications on the therapeutic influence of arsenic, by Mr. Hunt, whose name is favourably known to the profession for the assiduity with which he has studied this particular class of diseases. At the suggestion of various friends and correspondents, Mr. Hunt has been induced to give his views in greater detail in the form of a separate work,§ the contents of which we shall endeavour briefly to analyze.

The author's object in the volume in question, is not so much to present a general treatise on skin diseases, as to point out a successful method of managing those which usually baffle the efforts of medicine. With this intent, he lays aside at once all minute nosological discoveries, and places the diseases which he wishes to descant upon all in one class, marked by one principal feature, that of intractability. In this prominent feature are merged the ordinary subdivisions of papule, vesicle, scale, &c.

In order more distinctly to detach these cutaneous affections from their respectively nosological position, he distinguishes them by certain negative characters, under which he is enabled to exclude many varieties, and to retain only those which tend to intractability. Thus, the diseases in question—

1st. Are not of limited duration, but may afflict a whole lifetime. This excludes at once nearly the whole class of the exanthemata.

2d. They are not necessarily connected with or symptomatic of other disorders. We here exclude strophulus, aphthæ, phymæ, and syphilitic eruptions.

3d. They neither originate in, nor are protracted by local causes. Scabies, porrigo, and certain local forms of psoriasis, pityriasis, prurigo, eczema, and impetigo are thus excluded.

\* Guide to the Examination of the Urine, &c., 12mo., 1847.

† Revue Méd., June 1847.

‡ Archives Générales, Juillet 1847.

§ Practical Observations on the Pathology and Treatment of certain Skin Diseases generally pronounced intractable. Lond., 8vo. 1847.



4th. They are not specially allied to debility; this puts aside pemphigus, pomphylx, rupia, and some varieties of purpura and ecthyma.

We have thus the subject much narrowed, and the intractable class therefore includes certain varieties of lichen, lepra, psoriasis, impetigo, eczema, and ecthyma, chronic urticaria, acne, sycosis, lupus, and rare congenital nævus. Having thus pointed out the diseases which he considers to be matter of present discussion, the author proceeds to speak of their diagnosis.

In the diagnosis he states that the most important point to be ascertained is whether they are or are not of syphilitic origin. This point being decided in the negative, we have next to ascertain whether the eruption be complicated with any other deviation from health, local or constitutional, and especially whether a febrile state co-exists.

The diagnosis being made out, the treatment is first to be regulated upon general principles. These it is not necessary to detail, as they are familiar to every educated practitioner; but we may premise that the author's remarks in connection with these are well worthy attention. He particularly mentions the very common error of beginning a system of alterative treatment too soon as one of the principal elements of failure, and in this we are sure he is strictly correct; it has often occurred to us to witness the failure of arsenic, cantharides, iodine, &c., simply for the reason that the case required antiphlogistic treatment in the first instance. It is, however, with reference to the exhibition of arsenic that our author's remarks are chiefly valuable.

The numerous failures of this medicine in the treatment of cutaneous diseases the author believes to depend upon five causes: 1st, the syphilitic character of the eruption is often overlooked, and arsenic is given when mercury is wanted; 2d, it is given in the inflammatory or febrile state of the eruption, when it never does good, but sometimes harm; 3d, it is often given on an empty stomach, and the irritation thus induced becomes a bar to its exhibition; 4th, it is given in doses too large, and at intervals too distant; 5th, it is generally given in *increasing* doses—this the author regards as a fundamental error, and is indeed the groundwork and end of his remarks.

The proper mode of exhibiting arsenic may be inferred from its therapeutical properties; and as these are imperfectly understood, the author endeavours to place them in such a light as shall seem to justify his inference.

Arsenic, in the first place, is a cumulative poison, and must, therefore, be used as other cumulative poisons are; that is, as soon as its specific effects are produced, the dose must be *decreased*. This is, as we have said, contrary to ordinary practice.

2d. The disease for which it is given is sometimes suddenly brought to a standstill as soon as the specific effects are manifested; in which respect arsenic resembles mercury. As soon, then, as the conjunctiva becomes irritable, the dose may be reduced. Mr. Hunt strongly urges the necessity of watching this symptom, as it generally precedes the gastric derangement produced by the medicine, and becomes, therefore, a good index of the extent to which it can be safely carried.

Another property of arsenic mentioned by Mr. Hunt is, that when incautiously given it sometimes leaves the system too sensitive of its effects; thus it cannot afterwards be given in the smallest doses without causing disturbance.

Mr. Hunt also states that in small doses arsenic is useful in diarrhœa, and relates cases in which an obstinate purging ceased, together with an eruption, under its influence.

In persons very susceptible of its effects, Mr. Hunt states that a remarkably small dose, such as the *fourth of a minim*, will be sufficient to cure the disease for which it is given. Another effect of arsenic, which Mr. Hunt thinks is not noticed by any other writer, is the production of a dirty brown discoloration of the skin. In this supposition, however, he is mistaken, as may be seen by a reference to art. 42, in the present volume, where M. Devergie distinctly alludes to the same appearance, and even goes so far as to say that the cutaneous disease cannot be considered as cured till it is produced.

From the preceding review of the action of arsenic, Mr. Hunt establishes certain therapeutic principles, the chief of which we transcribe:

The pulse and temperature of the skin must be reduced to a healthy standard by antiphlogistic means.

Fowler's solution may be given in five-minim doses three times a day *after* meals. The dose should be taken with regularity, and the patient should be seen twice a week. When the conjunctiva becomes inflamed the dose must be reduced, but the medicine must not be entirely abandoned until weeks or months after morbid action has subsided.

If the cutaneous disease should assume an inflammatory type during the arsenical course, it will seldom be necessary to discontinue the medicine, but the inflammation must be reduced by smart purgation and the application of leeches to the inflamed portions of skin.

The arsenical course should be protracted in reduced doses for as many *months* after the final disappearance of the disease as it has existed *years* before.

The curative power of arsenic will, in all cases, be found in doses too small to be mischievous.

In illustration of the foregoing opinions the author, in the second section of his work, relates cases of the different forms of cutaneous disease in which the efficacy of arsenic administered upon his plan is strikingly shown. Those cases include instances of inveterate eczema, impetigo, psoriasis, lupus, &c., and may be read with great advantage, not only for the purpose of understanding the author's views respecting arsenic, but as exhibiting a well-devised and scientific course of general treatment.

The last section of Mr. Hunt's work is devoted to an inquiry of no mean importance, viz., whether certain old-standing cutaneous diseases can be cured with safety. The author's decision is opposed to the general opinion, that the cure is hazardous. On the contrary, he believes that, with certain precautions, the removal of those long-established maladies is not only safe, but salutary.

In concluding this Report we think it right to state that there have been several important papers published during the past six months, of which our limited space precludes our mentioning more than the titles:

1. The Lectures delivered before the College of Surgeons, by Mr. Paget, on Nutrition, Hypertrophy, and Atrophy. Some portions of these valuable lectures will probably be noticed in the Report on Anatomy and Physiology, in the present volume; others will be more appropriately mentioned in a contemplated Report on Pathological Anatomy, which will appear in our next Volume. (*Med. Gazette*, May.)

2. Cases Illustrative of the Condition of the System, accompanied by Oxalic Urine. (*Prov. Med. and Surg. Journ.*, July, Aug.)

3. On the Contagion of Plague by Mr. Lindlaw. (*Edin. Med. and Surg. Journ.*, Oct.)

4. Researches on Cancerous Growths, by Dr. Bennet. (*Edin. Month. Journ.*, Oct.) Will be given in Report on Pathological Anatomy in next Volume.

5. On the Etiology of Enlargement of the Heart, by Dr. Barlow. (*Guy's Hospital Reports*, 1847.) In our next.

6. On the External Application of Aconitum Napellus, by Mr. Grantham. (*Med. Gazette*, Aug. 6, 1847.)

## II.

# REPORT ON THE PROGRESS OF SURGERY.

BY HENRY ANCELL, ESQ., M. R. C. S.

### § I.—*The Inhalation of Ether in the Practice of Surgery.*

Now that the impression created by the novelty of the inhalation of ether to prevent pain during surgical operations is somewhat subsided, our readers will doubtless be desirous of learning the more matured opinions of some of those who have had the best opportunities of testing this important discovery. The journals contain innumerable instances of successful surgical practice under its influence, by the leading surgeons of France, Germany, Belgium, Italy, and Spain, as well as in our own country and in America, among which the reduction of recent and long-standing dislocations, the removal of tumours and diseased bones, the reduction of strangulated hernia by taxis and operation, lithotomy, and the excision of joints, may be mentioned as prominent examples.

At the same time objections to its employment have been reiterated. We find several writers describe hysteria and excitement "to such an extent as would interfere with every capital operation," among its occasional effects\*. Mr. Richardson† infers, from a case which occurred under his own eye, in which it was administered previous to the extraction of a tooth, that the vapour may prove fatal from convulsions, induced by congestion of the brain, and that inhalation is inadmissible where there is a tendency to apoplexy, epilepsy, and other cerebral affections; in children, and in plethoric individuals. In the particular case referred to, convulsions continued until the patient was relieved by the extraction of eighteen ounces of blood. Dr. Wallace, of New York, observes that although persons of sound health may survive the effects of ether, there is risk of rupturing the vessels of the brain; that it is "dangerous to be made dead drunk by any cause;" and that where there is a tendency to apoplexy or mania, injurious effects may result.‡ M. Blandin has remarked on the danger of prolonging the inhalation, owing to the modification of the blood which it produces, transforming arterial into black or violent blood, and producing a semi-asphyxia;§ and Blandin and Velpeau consider that operations on the face should not be performed during etherization; the excision of a tonsil, it is said, may occasion suffocation. These are among the objections urged by particular writers, and it is right that the practical surgeon should consider the extent to which their validity is to be admitted.

—Mr. Syme's practice with ether was at first unsatisfactory; but he has since performed the following operations under its influence, the ether having been administered with a better apparatus:

1. A large fibrous tumour removed from the breast. From the commencement of inhalation to the conclusion of the operation four minutes elapsed; there was complete union by the first intention, and the patient was able to leave her bedroom before the end of a week.
2. Amputation at the shoulder-joint for osteo-sarcoma of the humerus. Union took place by the first intention, and the patient was up and dressed by the end of a week.
3. Excision of the shoulder-joint, including the head of the humerus and glenoid cavity, removed by dividing the neck of the scapula. Union took place by the first intention through the greater extent of the incision; recovery was delayed by slight erythema, but the case was advancing rapidly to a satisfactory conclusion.
4. Amputation of the foot by Cho-

\* Med. Gaz., April 1847, p. 611.

† Idem, 61.

‡ The Boston Med. and Surg. Journal.

§ Acad. of Med., March 20.



part's operation through the tarsus. Union took place by the first intention; there was slight suppuration under the integuments over the end of the fibula, requiring an outlet for the matter; recovery was nearly completed at the time of the report. 5. A large tumour of the scrotum, weighing two pounds, removed without the slightest unpleasant symptom, the wound being nearly healed. 6. A tumour of the jaw, requiring the removal of four teeth and a portion of the alveolar process. No unpleasant symptom occurred; the patient was dismissed a few days after the operation.

Mr. Syme and other surgeons have remarked that, in many operations, it is of the utmost importance that the patient should retain a voluntary control over his movements, not only for assisting the operator by executing those that he may desire, but also by abstaining from those which would be obstructive of the object in view. Mr. Syme, however, still says that he has known the operation for fistula in ano prevented by the convulsive efforts induced through the use of ether, and that in all careful dissections, as those for hernia, and for the removal of tumours from intricate connections of importance, the inhalation should be advised against. Mr. Syme illustrates his view of the limitation to the use of ether by stating that he lately disarticulated a clavicle from the sternum, for osteo-sarcoma, and dissected out some large deep-seated tumours of the neck, with results which he believes might not have proved so satisfactory if ether had been used. In operations affecting the nose and mouth, he agrees with the French authors already quoted, and that it is inexpedient to render the patient insensible, lest, from the want of voluntary effort, suffocation, or an approach to it, might arise from the entrance of blood into the air-passages. Finally, this surgeon warns against—and this should be particularly noted—administering the ether to persons in a great state of weakness or exhaustion.\*

—With these qualified opinions before us we were gratified at receiving a memoir by Dr. John Snow, who has enjoyed the most favourable opportunities, by frequently administering ether in St. George's and the London University College Hospitals, and has furnished the profession with the results of his experience† as to its effects in surgical operations. Dr. Snow gives the most unequivocal testimony to its safety and efficacy; he speaks with confidence of the "constant success" with which it is capable of being employed. Of 26 amputations in both hospitals, in all of which the ether was administered, 21 patients recovered and 5 died; being a little below 20 per cent., which is lower than the average mortality after the removal of diseased limbs; of the cases of lithotomy, five in number, all ended in recovery. There were 6 operations in which the whole mammary gland was removed, and the patients all recovered so far as the operation was concerned. After 78 operations in both hospitals there were but 6 deaths. In none of the 6 cases could the event have been caused, or in any degree promoted, by the inhalation, since there were sufficient and well-recognized causes to account for the result. The great safety of the process of etherization, under proper management, in cases which might be presumed to be the most unfavourable, is illustrated by a case, amongst others, in which a very tedious amputation was performed upon a man having extensive disease of the heart, etherization being carried to its full effect, complete insensibility induced for a quarter of an hour, not the least ill effect resulting, and the patient completely recovering from its influence before he was removed from the operating table.

Dr. Snow makes a better division of etherization into stages, as respects the practical utility of such a division, than those by Flourens and others, described by the Editor in our last volume. He divides the effects into *five* stages or degrees, admitting that these divisions are in some measure arbitrary, since they run into each other and cannot always be clearly distinguished; in the *first* degree, the feelings of the patient are changed, but he retains consciousness and the power of voluntary motion; in the *second* degree, mental functions may be exercised and voluntary actions performed; in the *third*, there is no evidence of any mental functions being exercised or any voluntary motion occurring, but muscular contractions may sometimes take place as the effect of the ether or of external im-

\* Month. Jour. of Med. Science, Aug. 1847, pp. 74-6.

† On the Inhalation of the Vapour of Ether in Surgical Operations. 1847.

pressions; in the *fourth* degree, no motions are seen except those of respiration; in the *fifth* degree (not witnessed in the human being), the respiratory movements are more or less paralyzed, and become difficult, feeble, or irregular. The phenomena, in these different degrees, are accurately described by Dr. Snow. A surgical operation would cause pain in the second degree, and it would be more difficult to operate in this stage with than without ether. If the third degree be not well established when an operation begins, the first cut may cause a sudden contraction of the whole muscular system, and struggling and rigidity may occur, although there is never any recollection of operations in this degree; the fourth degree is that in which operations ought to be performed; in it the patient always remains perfectly passive under every kind of operation; this is also the proper stage for the reduction of dislocations; the patient never begins to snore until he has reached this fourth degree, or is passing into it from the third, and when snoring occurs there is a total insensibility to everything which is done; in the fifth degree, as met with in animals, the respiration begins to be irregular, feeble, or laborious; this is the stage immediately preceding *death*, and there can be no doubt that fatal results would be met with in the case of man, if the vapour were administered so as to increase its effects beyond what is ever required; this degree is only mentioned as a state to be avoided. Dr. Snow is in the habit of continuing the inhalation until after the operation is commenced, but so soon as there is the least sign of snoring he always leaves off the vapour entirely, even without waiting for the commencement of an operation which he had requested might be proceeded with.

The work contains some of the physiological details respecting the modus operandi of ether; its relaxing effects are much greater than those of the warm bath and emetics; a dislocation of a shoulder, after weeks' duration, for instance, in a muscular man, was reduced under its influence, the muscles being completely relaxed; the experimental and physiological matter we are compelled to pass over, in order to place before our readers the more practical result. We may state, however, that in explaining the difference between asphyxia, or the exhibition of narcotics by the stomach, and etherization, it is stated that, however nearly *dead* animals may be from the action of ether, if the breathing has not actually ceased, when the vapour is discontinued they always recover; so far from agreeing in M. Blandin's opinion, before alluded to, Dr. Snow regards etherization, in its effects on the blood, as totally different from asphyxia. Etherized blood affects the medulla oblongata sooner than the ganglionic system, so that respiration ceases before the circulation.\*

We may state with confidence that of the failures recorded in the journals, by far the greater number have obviously occurred during an imperfect state of etherization; even the exceptions made by Mr. Syme, and the limitation laid down in his communication, by no means necessarily hold good, and, without denying that there are circumstances under which the use of inhalation may be contraindicated, these can only be arrived at by the statistics of operations performed, during what Dr. Snow designates the *fourth* degree, or during the perfect state of etherization, which circumstance indicates the necessity for surgeons being well acquainted with the proper mode of regulating the process, and never attempting it, for the purpose of submitting a patient to an operation, without being assured that the ether to be employed is of good quality, nor without an apparatus to be thoroughly depended upon.

Dr. Snow further states that he is not aware that any circumstance with respect to age, constitution or disease positively contraindicates the use of ether during a surgical operation. The patients to whom he has given it have been in the most different conditions of general health; two or three had symptoms of tubercles in the lungs; one had extensive disease of the heart; two or three had been subject to attacks of congestion of the head, and yet there have been no ill consequences from the ether in any case, and not even any unpleasant effects to counterbalance its advantages, except sickness and vomiting in a few instances. There are, however, certain states of the body in which ether sometimes acts less energetically than in others; but these are states in which we seldom find patients who require

surgical operations. Persons in robust health are sometimes less easily made insensible than others, and are more liable to excitement in the second degree, and to struggling in the third degree, and also to have a headache after the ether. Such persons, however, do not often require even a trifling surgical operation, and if they do, a little abstinence and purgation will place them in favourable circumstances. And if a person in robust health should require an operation, the temporary depression consequent on the injury, and usually also loss of blood, would serve as a preparation. On the other hand, to the contrary of the opinion which we have quoted from Mr. Syme, insensibility is induced, according to Dr. Snow, with great ease in persons debilitated by long illness, and in children under all circumstances. Children are, indeed, amongst the most favourable subjects for ether, recovering from its effects as promptly as they are brought under its influence, and it possesses more than the usual advantages in their cases, as, without it, their struggles would often interfere with the performance of the operation.\*

Among the practical rules laid down, the *position* of the patient during inhalation is worthy of consideration. In nearly all capital operations, the position which the surgeon would select, independently of the ether—viz. on the back, with the head supported on a pillow—is very favorable. For operations on the anus, the patient has to lie on the side, with the knees drawn up, as it would be impossible for him to stand, or even to kneel, and lean over a chair or table, when insensible. Sitting upright in a common chair is not a good position, and should, therefore, if possible, be avoided. It has answered very well in a number of cases, but on two or three occasions caused some difficulty, either from the patient, when insensible, having a tendency to slide off the chair, or from his stretching his limbs out, in the second or third degree of etherization, when it became impossible to keep him seated. If the patient is obliged to be seated, a chair with a high back, to rest the head against, is the best seat. The dentist's chair answers very well for his operations, as the patient is partly reclining, and has the head supported.

When, during an operation, the inhalation having been discontinued, it is necessary to *resume* it, the time for doing so must depend on circumstances. If any important steps are going on, it is advisable to anticipate the return of sensibility to pain, and to resume the inhalation as soon as returning sensibility of the eyelids, or any voluntary motion in them, shows that the patient is returning to the second degree. If only some secondary part of an operation—as the tying of arteries—is going on, we may wait till there is some sign of the operation being felt, before resuming the inhalation, and it will remove any such sign in a very short time, it being seldom necessary to continue the inhalation more than half a minute; or a minute at the furthest, if the valve is closed and the vapour of full strength when it is resumed during an operation, after insensibility has been previously induced. There is very seldom any struggling in the third degree, as it succeeds to the fourth; but if there be, it may then become necessary to give more ether to keep the patient in the fourth degree for some time, not because he would feel pain with a less degree of etherization, but because he would not remain sufficiently still.

Again:—*Insensibility to pain may be kept up for a long time without risk*, by allowing occasional partial recovery from the effects. Dr. Snow kept an elderly gentleman quite oblivious for two hours and a half after Mr. Liston had applied a thick paste of chloride of zinc to a large ulcerating tumour in the face. Each time that he began to feel the smarting, the ether was resumed; at first, after intervals of ten minutes, then of a quarter of an hour, and finally of twenty minutes, the recoveries becoming each time more complete before the pain recurred. But the patient had no recollection of them, for each time that he recovered his consciousness, he asked if Mr. Liston had gone without applying the caustic. At the end of two hours and a half, having been allowed to recover more completely than before, he considered that the pain was not more than he could bear, and the inhalation was not resumed. Five fluid ounces of ether were used, and no effects of any kind followed, unless that the pain, for some hours, was not so great as it probably would have been.

Finally, under all these circumstances, except a headache, on one or two occa-

\* On the Inhalation of the Vapour of Ether, p. 27.



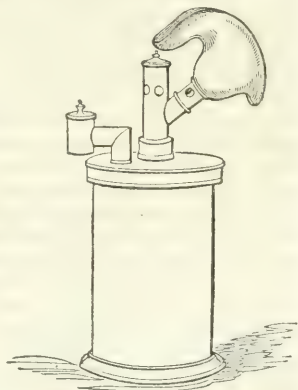
sions, the only unpleasant effect that Dr. Snow has ever seen from the inhalation, has been sickness and vomiting, which are only occasional results, and seldom occur except when a meal has been taken just before the ether, a measure which the author prevents when he has the opportunity. It is when, after a meal, the etherization is deep—for instance, in the fourth degree—and continue for some time, that vomiting is most likely to occur. It may take place either during the insensibility or not until afterwards. When sickness occurs, it greatly prolongs and increases the insensibility to what the surgeon is doing; even if the consciousness has returned, pain is seldom felt during the sickness. The nausea and vomiting generally subside immediately, but, in two or three instances, have continued till the following day.

We have thus laid before our readers, in addition to the detailed Report by the Editor, published in the last Volume (p. 328), some of the more essential practical facts which have since been developed, so far as surgery is concerned. Our extracts also contain a few illustrative cases. (Art. 62, p. 96.)

The best apparatus for the administration of ether which we have yet seen, we believe to be one invented by Mr. Squire, and here delineated:

It is constructed on the principle of the Archimedeon screw, by means of which, the largest possible surface in a given compass is obtained: and is of the size of an ordinary Mudge's inhaler. A spongy material entirely covers the screw, which will absorb two fluid ounces of ether, over which the air passing in one continuous stream, and on its passage imbibing the maximum quantity of the vapour of ether, enables the patient to inhale with perfect ease. The adjusting ferrule near the mouth-piece, affords the operator the power of diluting the vapour to any strength required. The mouth-piece, when pressed under the nostrils, closes them, thereby dispensing with the disagreeable necessity of holding the nose.

This apparatus has also the advantage of being less expensive than those in general use, and having no glass in its construction, is less liable to accident.



## § II.—*The Application of Galvanism in the Practice of Surgery.*

After the inhalation of ether, one of the most interesting subjects at present under investigation, is the application of galvanism to surgical practice. In our last Report\* we furnished our readers with some of Dr. Bellingham's opinions as to its use in the cure of aneurism, which are by no means favourable; also with Dr. Apjohn's account of its *modus operandi*; in the present Volume will be found an extract relating to the action of the galvanic current upon urinary calculi, and upon the bladder itself (art. 68, p. 107); but it is in affections of the arteries and veins that this physical agent appears at present to have been called most successfully into requisition. The subject is manifestly in its infancy; it has met with comparatively little favour either in this country or in France or Germany; the Italians entertain the most sanguine expectations as to the efficacy of galvanism as a remedy, and it is to them that we are mainly indebted for the more recent experiments.

1. *The Treatment of Varices by Galvanism.*—The Italian journals contain numerous cases of varices said to have been cured by galvano-puncture, although this method of treatment has been very little resorted to in any other country. The subject was referred to in our last Volume, pp. 110 and 197. The editor of the "Medical Gazette" of Paris has subsequently remarked,† that although considerable pain is the usual effect of each operation, yet such pain, and the inflammation which follows, are so obviously produced by the needles having been but

\* Half-yearly Abstract, Vol. V. p. 196.

† July 10, 1847.

imperfectly coated with the isolating varnish, that this circumstance ought not to prejudice the operation. The following additional cases are recorded by M. Gamberini:

A man, aged 24 years, had varices of the principal venous trunks of the left leg, rendering walking very painful; on the 24th of November, 1846, after bandaging the limb, as for the operation of venesection, M. Gamberini implanted four steel needles crossways into the principal venous trunk, their points being plunged into the interior of the vessel, but not allowed to remain in contact with its parietes. He then put into communication with two of the needles the positive and negative poles of a voltaic pile, in which there were twenty-four discs of two inches diameter. The electric circle was scarcely formed when the patient complained of the most violent pain, but on continuing the operation, he only experienced a slight heat, occurring at intervals, as the electric circle was re-established. After a few minutes a yellowish areola was established round the negative needle, which shortly became a vesicle filled with serous fluid, and finally the epidermis broke. On adding to the pile, the pain was so much increased that the patient could not endure it. After a quarter of an hour the conductors were applied to the two remaining needles, but spasm occurring, the experiment had to be suspended. The positive needle was easily withdrawn, but the negative needle, oxidized at its point, was drawn through the tissues with difficulty, and was followed by a little blackish blood. The portion of vein comprised between the needles was hard, blackish, and manifestly contained a clot; the limb was then bandaged; six hours afterwards there was a little fever, preceded by a chill, which subsided in the night; in the morning there was slight ulceration at the site of the negative needle; the vein continued black and hard, and the current of blood was arrested above the clot.

The obliteration of this vein being thus effected, galvano-puncture was employed, six days afterwards, in another trunk, the folds of which constituted a varicose group; a pile of thirty plates was employed; the operation was continued twenty-five minutes; there was no other painful sensation than that of a weight, and the obliteration was obtained without any reaction. The operation was repeated on two other veins with similar success, and progression daily improved.

A man, æt. 36, had suffered with varices many years: one in particular, situated in the neighbourhood of the internal malleolus, was very large. M. Gamberini made the first galvano-puncture on the 5th of December, with five pair of plates, increased to nine, and only two needles. This agent successively employed in three different points produced obliteration of the vein, and there was no general reaction.\*

Contradictory accounts having been introduced into the journals respecting the effects of electro-puncture on the blood as it flows in the vessels, a commission was proposed by Dr. Calderini, for the purpose of repeating the experiments and reporting on their value. M. Asson, the reporter, arrived at the following conclusions:

1st. It is possible by electro-puncture to produce a coagulation of the blood in the vessels, and the formation of a clot composed of a certain number of fibrinous granulations connected together and adherent to the walls of the vessel, so as completely to intercept the circulation.

2d. The clot is produced independent of any alteration of the arterial tunics which could be attributed to inflammation, or its results, or to a thickening and coarctation of the vessel. The swelling which the vessel sometimes presents anteriorly depends upon a separation of the arterial tunics, calculated rather to dilate the vessel than to diminish its calibre.

3d. The granulations, which form the clot, begin to form from the moment the pile is applied. In ten, twenty or thirty minutes the clot is sufficiently solid, so as to suffice for the obstruction of the vessel.

4th. A clot may be formed in this manner as well in the veins as in the arteries, with this difference, that the venous is softer and deeper coloured than the arterial clot.

5th. The clot produced by two ligatures placed on an artery is less consistent and deeper coloured than the clot produced by electro-puncture.

6th. The clot comprised between the two ligatures treated during life by the electric-current has the same characters as that which is formed without the aid of electro-puncture, proving that for the formation of a solid and resistant clot, it is necessary that the part submitted to the experiment should be under the influence of the circulation in its normal state.

7th. The blood extravasated from the vessels and submitted to the electric current presents the character of a black areola and a froth around the needles, but does not coagulate, which is contrary to the statement of M. Pétrequin.

8th. Neither the species of animal, nor the diversity of chemico-physical or electric conditions of the blood, nor as respects the current, the diversity of the direction given to the needles' influence, *cæteris paribus*, the formation or non-formation of the clot.

9th. Galvanism is a mode of producing a solid, obstructing clot, without cauterizing the arterial tunics, and without producing any serious effects on the system, especially if we operate by a continued current.

10th. The hemorrhage which occurs when the needles are withdrawn, generally from the negative pole, is of little importance, and easily arrested by the application of cold water.\*

Our readers will doubtless compare this statement with Dr. Apjohn's account of the *modus operandi* of galvanism in causing the coagulation of the blood in an aneurismal sac.† The two accounts appear to be totally at variance, and to lead to diametrically opposed practical conclusions.

2. *Aneurism at the Bend of the Elbow cured by Electro-Puncture.*—M. Restelli describes a case, respecting which, the editor of the "*Gazette Médicale*" has remarked that it was so simple, and its success so prompt, that we must no longer doubt the efficacy of the method. In consequence of a severe contusion, a phlegmon developed itself over half the forearm of the patient, and after its resolution a tumour remained at the bend of the arm. The tumour was about the size of a walnut, and manifestly an aneurism. Two needles were implanted, to the extent of six lines, in the tumour, and in such a direction that their points were opposed to the current of blood; the needle intended to correspond with the positive pole was placed above, and the other eleven lines below, and a little sideways; having then attached the conductors to their poles respectively, and brought the pile into play, as soon as the galvanic circle was formed, the patient made a violent movement, not only of the arm, but of the whole of the right side of the body. He soon after became tranquil, complaining only of a slight smarting at the point occupied by the positive needle. The limb was free from all compression. In twelve minutes the pulsation became invisible to the naked eye, and presented to the finger no more than a distant shock. The size of the aneurism, however, remained the same, and its consistence was equal to that of a fatty tumour. The needles were withdrawn at the expiration of twenty minutes, the negative one easily, but the positive with some slight difficulty; the latter was blackened, and the puncture was surrounded with a black circle. The tumour was firm and no longer indicated any pulsation either to the finger or to the ear. The humeral artery continued to beat, but the radial and cubital arteries had suspended their pulsations. There were a little torpor and formication in the forearm and hand, and a little heat around the aneurism. The tumour diminished in size about one-third in the first ten days, and in about five weeks was of the size only of a very small filbert, hard and without the slightest pulsation; the circulation became completely re-established in the radial and cubital arteries, and the motions of the limb as free as before the disease.

M. Restelli proposes the following rules for this method of treatment:

1st. In conformity with the opinion of M. Pétrequin, and contrary to that of Dr. Siccone, he prefers a pile of many small discs, which augments the electric tension, at the same time diminishing the quantity of the fluid. In this manner the coagulating action, the force which induces the formation of the clots, increases, while the quantity of caloric diminishes.

2d. He also agrees with M. Pétrequin on the utility of covering the needles with an isolating coat over the portion which is plunged into the tumour; but has not

\* *Annali Universali di Med.*, Jan. 1847.

† *Loc. cit.*



succeeded in producing a varnish with a sufficient polish that would adhere to the needle.

3d. He insists on the advantage which results from placing the needles in a direction contrary to the course of the blood. By this disposition they constitute, by their presence alone, an obstacle to the circulation, which may initiate the coagulation, and be auxiliary to the electric action.

4th. He remarks, that in operations of this kind, the poles have generally been changed after the lapse of a certain time, putting the zinc pole to the needle which was first attached to the copper pole, and reciprocally. It is of the greatest importance, on the contrary, not to vary the poles during the whole sitting: for if it be true that the clot which forms round the needle of the zinc pole may be explained by meeting at this point with the acid of the salts, which the pile decomposes with the albumen of the blood, we see clearly that the substitution of one pole for the other may risk the resolution of the clot already in the process of formation, by setting alkali free, which would be capable of dissolving the coagulated albumen.\*

—Dr. Finella published a paper in Dec. 1846, on the application of galvanism in ophthalmic and aural surgery, in which he concludes, from facts recited, that a continued galvanic current is most efficacious, both in amaurosis and in preventing nervous deafness.†

### § III.—*Injuries and Diseases of the Arteries and Veins.*

3. *The Treatment of Aneurism by Compression.*—Dr. Bellingham has published his “Observations on Aneurism, and its Treatment by Compression,” in a small volume:‡ but the practical part of this memoir having been partly introduced into the Abstract, and the remainder not admitting of being very briefly reported, we are compelled to defer it to a future volume.

4. *A new Instrument proposed for the Compression of Arteries.*—To convey an idea of this instrument, invented by M. Biagnini, it must be compared with a pair of double compasses, the metallic limbs of which can be firmly fixed at the required degree of divergence. A large pad is placed on one of the free extremities, to be applied to the part of the limb diametrically opposite to the artery intended to be compressed. The other branch carries the plate to act on the artery itself, and it is in the form of this, and the mode in which it is articulated with the branch, that the novelty consists.

It consists of an oval metallic plate, with an opening at each centre of the ellipse, in which is placed a long compression screw, one of the ends of which terminates in the form of a key, to allow it to be easily turned, and the other is furnished with a small elongated pad. The intention of the inventor has been, that these two small pads should be applied, at the will of the surgeon, either in the direction of the course of the artery, or transversely, or obliquely over it. For this purpose, around each of the openings which give passage to the screw, the plate is pierced with two slits, in the form of an arc of a circle, concentric to the openings, and encircling them on each side like two parentheses. Over these a nut, of the diameter of the space circumscribed by the two slits, is fixed, and two metallic stems being soldered on the superior face of the two pads traversing the two slits, and being fixed on the nut placed above these slits, it may be understood that the surgeon could at will give to the pads any direction he might desire, and fix them, by means of the screw, so that they rest in the direction of the artery, or cross it more or less obliquely. Another point was to give such an inclination to the pads that they might act perpendicularly to the plane of the region of the artery to be compressed. It was necessary for this purpose that the plate itself should be capable of being placed at a variable angle, according to the obliquity of the surface and the size of the limb. This is easily effected by a joint between the plate and the branch of the compass, which, although movable, can be firmly fixed at the required angle. The branches of the instrument can then be opened from two to eight inches, and it becomes thus equally applicable for the compression of the external iliac of an adult, or the brachial artery of a very young infant.

\* Gaz. Méd., 17 Juillet 1847.

† Annali Univ. di Med.

‡ 1847.

The two pads placed beside each other constitute one of the greatest advantages of the mechanism, since it allows the pressure to be applied to the same point of the vessel only for a short time, and still it is not necessary to suspend the operation. When, for example, the pad placed at the greatest distance from the heart, alone compresses the artery, the action of the artery becomes very sensible above, and indicates the situation where it is required to put the pad, when it becomes necessary to set free that portion of the vessel primarily compressed. In many cases, where it is sufficient to relax the circulation without entirely suspending it, M. Biagnini's instrument is said to effect the purpose most efficiently. Lastly, by the elongated form of the pads, which allows the pressure to be made over a greater extent of the vessel, the pressure may be allowed to be less severe, while it is not less efficacious. The two concentric slits at each opening, are especially useful in affording the means of directing the large diameter of the pad transversely to the course of the vessel, whatever may be the direction of the vessel with relation to the axis of the limb wherein it is situated.\*

—Dr. Bellingham mentions a double-padded compressor as having been invented by Mr. Millikin, but not answering so well as two separate instruments.† The mechanism is not described, and accordingly, we cannot say how nearly it may approach to M. Biagnini's contrivance.

5. *Aneurism of the Basilar Artery.*—Our last Volume contains the details of a case of this rare disease, by Dr. Raschenberger (p. 189), and the "American Quarterly Journal"‡ has collected three cases more which have been recently recorded.

One case was communicated to the Pathological Society of Manchester by Dr. Francis. The aneurism arose from the junction of the left carotid and posterior communicating arteries, and involved both these vessels. Upon the outer and inferior wall was a ragged opening, a line and a half in length, through which fatal hemorrhage into the surrounding parts had ensued.

The lateral ventricles were greatly enlarged, and filled with clotted blood, mingled with flocculi of brain, which had been broken from their walls and the central parts between them. The fourth ventricle was much distended by the hemorrhage, which had also extended around the medulla oblongata, cerebellum, and the base of the brain generally.

The left side of the heart was empty, the right, together with the lungs, full of blood, and, excepting a few small spots of commencing atheroma in the thoracic aorta, the viscera of the trunk were sound.

The patient, a female servant, æt. 62, had gone to bed in apparent health, after having eaten her ordinary evening meal, and whilst in the act of rising on the following morning was suddenly, and without any warning, seized with semi-convulsions, passing rapidly into profound coma, in which she died rather less than an hour from the seizure.

She had gone about her duties with the appearance of health, and had made no complaints to those about her of any premonitory symptoms.

Judging from the time which elapsed before death took place, it is probable that the opening in the artery was gradually increased in size, and that the force of the extravasated blood expended itself upon the central and anterior parts of the brain, before it invaded the medulla oblongata; the situation of the bleeding point being mainly instrumental in determining the rapidity of death.

The rupture itself appeared to have been the result of gradual attenuation of the walls of that part of the sac rather than of any vital change leading to their disintegration.§

—Another case was communicated to the same society by Dr. Eager. The aneurism was situated near the bifurcation of the basilar into the cerebral arteries. The entire tumour was small, not exceeding in size a common pea, and it had a ragged fissure, through which the blood had flowed during the fatal seizure. The position of the aneurism was in the track of the portio dura, and had obviously pressed upon the origin of this nerve, as appears from the following detail of symptoms.

\* Gaz. Méd., 10 Oct., 1846, from the Bull. delle Scienze Mediche.

† Lib. cit., p. 97.

‡ April 1847, p. 431.

§ London Med. Gaz., July 1846.

William Yates, æt. 58, began to complain, nine months ago, of distressing pains in the head, which extended from back to front, but were not lancinating. Three weeks subsequently paralysis of the right side of the face followed, and was continuous until the day of death, affecting all the parts supplied by the right facial nerve. The pains in the occipito-frontal region, at all times severe, were increased after the ingestion of food. There was no deviation of the tongue, and deglutition was naturally performed. The thoracic and abdominal viscera were all healthy.

These symptoms remained unaltered until two weeks before death, when, in the night, he was seized with hemiplegia of the left side. The tongue could no longer be protruded, the powers of utterance failed, and deglutition was so extremely difficult as to threaten suffocation at each attempt to swallow.

He continued in this state until death, which happened suddenly during a fit of laughter caused by the conversation of a friend. Throughout the entire illness the mental faculties were unaffected, and the memory was as good as at any former time.

The body was examined twenty hours after death. In sawing through the calvarium at least two ounces of fluid blood escaped through a rent made in the membranes. Blood was generally effused over the surface of the brain, and a firm coagulum was found at the base. There was considerable serous effusion into the lateral ventricles, in the anterior portions of which coagula were also observed. The velum interpositum was broken down from mechanical pressure. The basilar artery presented appearances which were illustrated by a woodcut.

Dr. Eager remarked that the aneurism satisfactorily accounted for the principal symptoms, and especially for the paralysis of the muscular parts supplied by the facial nerve. That the occurrence of hemiplegia could alone be accounted for on the supposition that a small fissure in the aneurismal sac, with a certain amount of hemorrhage, had happened two weeks before death, and which, from favourable circumstances, had closed up, and thus for some days prolonged the patient's life. And, further, that the fatal attack was explicable by the presence of a great quantity of fluid blood to all appearance recently effused.\*

The occurrence, within so short a period, of two such rare aneurisms as the present, and the one exhibited at the meeting in July by Dr. Francis, contrasting so remarkably in their symptoms both before and at the period of death, in the absence of suffering during life, and the comparatively slow death in the one case, and the long continuance of the pain, and the instant death in the other, appear to have excited a lively attention. The reason for the presence of so much pain in the one case and its total absence in the other, forms an interesting subject for further investigation.

—A third case is recorded in Dr. Pfeufer's General Report, March 1844.

6. *Deligation of the Carotid Arteries.*—The July number of the "American Journal" contains an article by Dr. Norris on the statistics of the mortality and other circumstances relating to deligation of the carotid arteries and the arteria innominata, of the same comprehensive nature as those on ligature of the iliac and subclavian arteries, already brought under the attention of our readers. The substance of this paper will appear in our next Volume.

#### § IV.—Hernia.

7. *Strangulated Hernia treated with Opium.*—Several articles on this subject have appeared in the "Provincial Medical and Surgical Journal." Cases of the successful employment of this remedy have been published by Mr. Davis, of Presteign (Prov. Med. and Surg. Journal, Aug. 18, 1841); by Dr. Bell of Carlisle (Monthly Jour. of Med. Sci., Sept. 1841); Mr. Cooper, of Greenwich (Med. Gaz., Feb. 18, 1842); Dr. J. Ross (Monthly Jour. of Med. Sci., Jan. 1843); Mr. Walker, of Newcastle-on-Tyne (Med. Gaz., Jan. 12, 1844); Mr. Rowlands, of Ironbridge (Prov. Med. and Surg. Journ., Feb. 5, 1845), and Mr. Butler Lane (Prov. Journ., May 21, 1847). The last paper is given as an extract in the present Volume (art. 80). Mr. Mayo, of the County Hospital, Winchester, describes a case of strangulated femoral hernia successfully treated by this remedy. After taking six pills, with

\* Lond. Med. Gaz., Aug. 1846.



one grain of opium in each, at intervals—first of an hour, then of four hours—the strangulation was effectually relieved. Dr. Richard Long, of Arthurstown, has also related another case (Dublin Medical Press, May 12, 1847); this was an inguinal hernia; every effort at reduction had been unsuccessfully employed, and the necessity of an operation seemed inevitable; a pill, containing three grains of opium and two of calomel, was directed to be given every hour, and an enema of strong chicken-broth thrown up every fifteen minutes, in order to support the failing strength of the patient. The three first pills were speedily rejected, the fourth and fifth were retained; a cessation of pain and vomiting followed, and by the time that eight pills were given, an urgent desire to evacuate the bowels followed the administration of one of the broth injections, which led to relief and perfect recovery.\*

8. *Results of the Operation for Strangulated Hernia.* By Boyer and Manec.—In the hospital practice of MM. Boyer and Manec, since the year 1833, fifty-eight operations for strangulated hernia have been performed, the results of which are interesting as regards the propriety of employing *taxis*. Thirty of these cases were operated upon by M. Boyer. From 1834 to 1839 M. Boyer did not proceed to the operation, till prolonged attempts at reduction had been made; during this period *nine cases* were operated on, of which *eight* died, and *one* recovered. From 1839 to 1843 he employed the *taxis* to a much more limited extent: *seven* cases were submitted to operation, of which *four* died and *three* recovered. From 1843 to 1846 he had almost entirely abandoned the use of the *taxis*, and out of *fourteen* cases on which he operated, *four* died and *ten* recovered. M. Manec, on the contrary, during the same time, placed little reliance on the *taxis*, and uniformly proceeded almost at once to the performance of the operation. The results of this practice were that, of *twenty-eight* cases operated on, *two* died, and *twenty-six* recovered.

The practical deduction to be drawn, it is said, from these statistics, is that the employment of the *taxis* is productive of much harm. "No statement, however, is made as to the results of the cases which were successfully treated by the *taxis*. To judge fairly of the good or evil resulting from the attempts at reduction, the entire number of cases of strangulated hernia admitted into the hospitals should be given; and we doubt not that in such an aggregate of cases the number of recoveries would be greater, where the *taxis* is moderately and judiciously applied, than where the operation is uniformly at once performed." The conclusions drawn by MM. Boyer and Manec are—first, that the operation for hernia, performed at an early period, and before symptoms of peritonitis have declared themselves, is almost free from danger; and second, that peritonitis never occurs subsequently to the operation, if it has not been present before its performance.†

#### § V.—*Injuries and Diseases of the Urino-Genital System.*

In addition to our Report in the section on the inhalation of ether, the following notice deserves the most attentive consideration. In no instance will this potent antidote boast a greater triumph, than in relieving the exhausting and almost unendurable agony which attends the passage of renal and biliary calculi, particularly if experience shall prove that, under its influence, the passage of the calculus is promoted, or even if it should not be retarded.

9. *Ethereal Inhalation during the Passage of Renal Calculi.*—Dr. Ware makes the communication on this subject to which we refer.‡ Opium had been given with only slight relief, and the suffering was most severe; the ether was administered at a quarter before nine o'clock in the evening. The patient did not become at any time entirely insensible, but was very soon comparatively easy, and remained so as long as the influence of the remedy continued. As soon as pain returned he requested a repetition of the inhalation, and was again relieved. The pain still returned, from time to time, as the influence of the ether subsided, but was kept under by a renewal of the process until three o'clock in the morning, when

\* Prov. Med. and Surg. Journ., July 16, 1847, p. 319.

† Month. Journ. of Med. Science, May 1847, p. 851, from the Revue Méd.-Chirurg., Feb. 1847.

‡ Boston Med. and Surg. Journal, May 1, 1847, p. 205.

the patient became so easy that it was no longer necessary. During this period of about six hours, there were *thirty* repetitions of the operation which were counted, besides several others which were not.

The following practical inferences by the author are worthy of being noticed in connection with our general Report on the subject of Ether Inhalation:

1st. That a pain of this description, which is not relieved by large doses of opium, may be mitigated by inhalation of ether, without suspending the natural course of things by which its cause will be sooner or later removed. Hence this remedy may be applicable during the passage of a biliary calculus, in colic or in other cases of spasm.

2d. That an individual, as shown by Dr. Snow, may be kept under the continued influence of ether for a long time with safety.

10. *Lithotrity*.—In November last, M. Civiale\* read a memoir to the Academy on the results of methodical lithotrity, applied in those cases only for which it is appropriate. From 1836 to 1845 he operated on 266 patients, and obtained 259 cures, some of which were incomplete. He was consulted in 79 cases not adapted for lithotrity; of these he operated on 28, and saved 17; the remainder died of the disease. In all, M. Civiale had operated 582 times by lithotrity, up to June 1845.

11. *Lithotomy*.—M. Carri† had a patient who, after suffering the most violent symptoms of stone, spontaneously voided a calculus weighing 161 grammes (3½ oz.) through a dilated urethra, with pain of greater intensity than labour pains; it measured 3 inches and 5 lines by 2 inches and 7 lines; its surface was smooth, and it was composed of external layers of ammonio-magnesian phosphate, and carbonate of lime and magnesia, on a nucleus of uric acid.

—Dr. Kerr of Aberdeen, describes a case, in which death took place from hemorrhage on the fifth day; the flow of arterial blood during the operation was profuse, although not alarming, and every precaution had been taken to avoid wounding the arteries of the bulb; the hemorrhage ceased spontaneously after the removal of the stone on the morning of the fifth day, when all danger appeared to have been surmounted; the urine, all of which flowed per urethram, was tinged with blood, and in an hour afterwards the case was, to all appearance, beyond the reach of art, the patient presenting the character of sinking from loss of blood. No blood passed from the wound, but the bladder was manifestly distended by internal hemorrhage to half way between the pubis and umbilicus, and the patient died in a few hours. On post-mortem examination it was found that the hemorrhage proceeded from a variety in the distribution of the arteries of the perineum. The artery of the bulb and the transverse artery of the perineum came off from the pudic by a common trunk, which soon divided, and the artery of the bulb being much lower down or farther back in the perineum than usual, traversed the line of incision, and was, of course, divided along with the transverse artery. Dr. Kerr reproduces the following remark of Baron Boyer:—"Hemorrhage is one of the most common accidents attendant on lithotomy, and has often been laid to the account of the operator, or the particular operation he selected; but contrary to all justice, for the arteries of the perineum present such varieties, both in situation and in their course, that the most dexterous surgeon cannot be certain of avoiding them, no matter what operation he may perform."‡

12. *The Operation for Phymosis*.—In a case reported in the "Dublin Medical Press,"§ Dr. Hargrave cut the prepuce from the root of the glans *downwards and forwards* from its inferior aspect by the frenum. In place of the prepuce being circumsised, it was slit open, not along the dorsum, but as close and as parallel to the frenum as could be effected. This plan is infinitely to be preferred to the one in the opposite direction, or along the sides of the prepuce (which is too often adopted), for the following reasons:—1st. The diseased or ulcerated surfaces of the glans are most readily brought into view, and their characters ascertained for the requisite local and constitutional treatment. 2d. No deformity results from the incision, as the prepuce can be either retracted or drawn forward, preserving its normal appearance; while, if the other method is selected, i. e., slitting up the

\* Journal de Chirurg., Dec. 1846, p. 369.  
the Gaceta Medica.

† Nouvelle Encyclog., Dec. 1846, from  
‡ Edinb. Med. and Surg. Journal, July 1847, p. 155.

§ Wednesday, Aug. 25, 1847.

prepuce indifferently, so as to expose the ulcer, the deformity is always great, the penis presenting a triple termination when the incisions are healed; the glans may then be named a *glans alata*, the flaps of the prepuce forming the winged appearances, which will then call for a second operation, unless that they have been removed immediately after the primary one of slitting, which is always a very painful proceeding.

Cloquet was the first who proposed this operation, which is a valuable addition to operative surgery.

13. *Remedies for Incontinence of Urine.*—1st. *Benzoic acid* has been employed with success against this complaint; it is given in doses of twelve grains daily, half in the morning and half in the evening, and this dose may even be doubled. M. de Fraene, of Brussels, records a successful case in a girl between 13 and 14 years of age, who was attacked with nocturnal incontinence, after recovering from a second attack of acute rheumatism. The complaint was neglected for several months: there was no pain in the part, the appetite was good, and the bowels regular, but the face was pale. Various remedies were employed without success, after which, two drachms of benzoic acid were made into forty pills, four of which were taken night and morning, and the complaint was completely cured.\*

2d. *Camphor.*—A woman, aged about forty years, was received into the Hôtel-Dieu, under M. Guerard, to be treated for incontinence of urine and pulmonary emphysema. The first infirmity appeared to depend upon a phlogosis of the neck of the bladder. The urine passed involuntarily both night and day. The asthma was treated with acetate of ammonia (*"un gros et demi"* every twenty-four hours). The emphysema was much ameliorated, the respiration became more easy, and the asthmatic attacks after a few days ceased. The incontinence of urine, however, continued, for which enemata were ordered, containing four grains of camphor dissolved in yolk of egg, and mixed in a little water, so that it might be retained in the rectum. This treatment alone sufficed to remove the incontinence for some time. In a few weeks, however, it returned, and was once more removed in the same manner. At present the enemata are continued as a *prophylactic*, and the cure seems to be permanent.†

#### § VI.—*Injuries and Diseases of the Spine.*

14. The article in our last volume (p. 203), and those in the present (89 and 112), on the subject of curvature of the spine, cannot fail to interest the practitioner. The rules laid down to regulate the treatment of these cases have been so diverse, and the results have, for the most part, been so unsatisfactory, and at the same time the affection is of so frequent occurrence, that every suggestion in the way of practical improvement demands attention. In this country we believe that too little regard has been had to anatomy and physiology in much that has been written on the subject, and many of the received dogmas have been dictated by pure empiricism. The more recent productions of the press appear to be directed to the correction of this evil, and in the works both of Mr. Coles and Mr. Lonsdale, we find the subject submitted to physiological reasoning. In the work by the latter, which upon the present occasion we have most amply quoted, the physiology of lateral curvature is much more minutely investigated than in any of our English works, and the practical rules of treatment are founded on the principles elicited. To the innumerable expedients contrived by different continental and British surgeons for the purpose of effecting pressure or extension, or both, for the cure of spinal curvature, as those of Heister and Van Gesscher for the purpose of pressure, the extending beds and stretching apparatus of Verrel, Schreger, Lafond, Shaw, Langenbeck, Delpech, Le Vacher, and others; and the various apparatus acting by extension and pressure, as Schmidt's, Jorg's and Von Graeffe's, Mr. Lonsdale has added the modified apparatus already referred to in our extracts.

—Chelius remarks, that there is a well-grounded complaint that in many orthopedic institutions the entire treatment is conducted in too mechanical a manner; and that by long continued use of the extending apparatus, with constant rest, the

\* Journ. de Chirurgie, Dec. 1846, p. 368.

† Monthly Journ., May 1847, p. 855.



greatest injury is caused to the whole constitution of the patient: it will be seen that in the treatment now recommended, the object is to supersede this constant confinement, and that the treatment is founded more upon a consideration of the whole circumstances of the case, and less with a view to fulfil one particular indication, however prominently it may present itself.

15. *Dislocations of the Spine.*—In describing the case recorded at page 80 (Art. 54), Mr. Carassus justifies his practice of making no attempt at reduction in these cases: in doing so, he states that about two years ago a man, at the Hôtel-Dieu at Marseilles, after a fall, presented all the signs of a dislocation of the second vertebra, and died during the efforts which were made to reduce it. The editor of the "Gazette" remarks, that it would be highly desirable, for the interest of science, to be made acquainted with the details of this case.

#### § VII.—*Injuries and Diseases of the Integuments.*

16. *Treacle as a Dressing to Burns.*—Mr. Bulley has published a series of cases illustrative of the advantages derived from the application of treacle and water as a dressing to burns.\* The dressing is applied at a temperature of 98° by means of lint thoroughly soaked with it, and renewed night and morning. The action of the remedy, as far as Mr. Bulley has been able to observe, is directly sedative, and its first effects appear to be those of lulling the pain and moderating the inflammation. It also appears to have a tendency to retard putrefactive decomposition, as is clearly indicated by the absence of fœtor in the cases in which it is used. This was remarked, particularly, in an instance in which a burn of the abdomen occupied a surface of 270 square inches. Treacle appears to have been also used by Dr. Greenhow, of Shields, for the same purpose, as long since as 1838.†

—Dr. Payne, of Nottingham, has also published cases illustrative of this treatment, and states that for upwards of 20 years he has adopted it in burns and scalds.‡ In all such cases which come under his notice he orders the treacle to be applied pure on the injured surface and at the natural temperatures; folds of well-aired linen being laid over it, and the dressing allowed to remain for two or three hours at first, when the treacle will be found in a more fluid state, hot to the touch, and the rag saturated with it. The remedy is then reapplied in the same manner, but after the second or third day of the burn, will not require renewing oftener than once or twice daily, and the treacle will now begin to preserve its usual consistence while in contact with the burnt or scalded surface. The time occupied in healing the burn is very much less than in the case where other means are employed. On the whole, Dr. Payne knows of no remedy capable of exerting more beneficial effects in burns and scalds, however severe, than treacle; and is fully persuaded that life might be saved in the most desperate cases by the timely and free application of this invaluable remedy. It acts by effectually excluding the air, and (as appears by the fact of the pain entirely abating or greatly diminishing as soon as it is applied) by abstracting the morbid heat from the part, and thus proving at once sedative, refrigerant, and healing.§

#### § VIII.—*Syphilis.*

17. *Syphilis, Treatment of.*—Dr. F. A. Aran has given an account of Dr. Moij'sisovics' mode of treating syphilis with iodide of potassium combined with iodine, by which he professes to cure the disease in three or four weeks. He gives the iodide in doses of five to twenty grains three times a day, using at the same time a bath made with a drachm of iodine, a drachm and a half of iodide of potassium, and some common salt, the iodine not being added to the water until the patient is in the bath, where he is to remain an hour, and then to get into a warm bed to promote perspiration. This is continued for three days, when some itching of the skin occurs, and the dose of the iodide, having been five grains, is then gradually increased. About the tenth or eleventh day a febrile state arises, with itchings of

\* Prov. Med. and Surg. Journ., June 30, 1847, p. 361.

† Prov. Med. and Surg. Journ., July 28, 1847, p. 406.

‡ Med. Times, May 22.

§ Journal de Pharmacie.

the skin, and a scarlet rash, or an eruption like herpes zoster; this is followed by desquamation, from the 13th to the 21st day, and these taken together indicate that the iodization has reached its maximum. Dr. Moij'sisovics states he has never seen any return of the disease in cases where the eruption and desquamation pursued a regular course. For exostoses, condylomata, and pustules he uses a weak solution of iodine and iodide of potassium, and still weaker local baths, and he employs the same kind of treatment in every variety and stage of syphilis. Dr. Aran remarks that no account is given of cases in which this treatment has failed, and urges the necessity for its merits being more minutely tested.\*

—Mr. Hamilton terminates an article entitled "Some Remarks on the Use of Inoculation in Syphilitic Buboës, as a Guide to their Treatment," with the following summary of conclusions:

1st. That after opening a bubo, the wound, instead of healing, may assume a cancerous appearance.

2d. That the best way of ascertaining its real nature, whether it be virulent or non-virulent, is by inoculation.

3d. That if inoculation produce a specific pustule and ulcer, the patient, besides careful local means, should be subjected to mercurial treatment, as the most effectual and rapid way of healing the sore, and ridding the constitution of the virus.

4th. That if no specific ulcer follow inoculation, the wound of the bubo may be treated by simple local applications.†

18. *Syphilis of the Bones*.—Our extracts contain an article on this subject, being a lecture by Dr. Porter condensed (art. 67, p. 103). In a pamphlet by M. J. Venot, on the tertiary symptoms of syphilis, it is remarked that hypertrophy of the osseous tissue (exostosis and periostosis) and suppuration (caries) are the only generally described effects of this disease, produced on the bones, but M. Venot's clinical observation has assured him that syphilis may equally exercise its ravages on the skeleton by producing *friability*, or rather extreme *fragility* of the bones. The facts are not new, since they are but examples of fracture, occurring on the slightest motion, in subjects affected with confirmed constitutional syphilis; but some authors hold that this friability is a result of the employment of mercury. One of M. Venot's cases was under treatment with iodide of potassium; and in another old case of five years' standing, said to have been treated without mercury, attended with caries of the os nasi, the patient fractured his thigh, and died fourteen days afterwards; on post-mortem examination no effort at consolidation had taken place, and all the bones of the skeleton were in the most friable condition.‡

#### § IX.—Varia.

19. *Paracentesis Thoracis for Empyema*.—Dr. John Sevet, of the New York Hospital, records a case in which this operation failed, not from any mistake in the diagnosis of the disease, but from a *false membrane lining the pleura costalis, and so loosely attached to it as to be pushed before the point of the instrument*, so that the cavity containing the pus was not entered at all. Dr. Watson, in his lectures recently published, states, on the authority of Dr. Davies, that the operator should be careful to use a sharp instrument, otherwise the accident of pushing the false membrane before its point might occur. But no cases are referred to in which this accident actually occurred, neither is it stated that it has ever happened. That the dulness of the point of the instrument may be an occasional cause of this accident is, perhaps, Dr. Sevet remarks, partially true in the above case; for in another case which occurred in the practice of Dr. Hyslop, and whom he assisted in consultation, the same instrument was used, and for the moment with the same ill success, notwithstanding that distinct fluctuation existed at the point where the trocar was introduced. The delay of the pus was, however, only momentary; the introduction of a probe, probably by rupturing the false membrane, gave it a free passage.

But a dull instrument is not the sole cause of the accident. That the false mem-

\* Archives Générales, Jan. 1847.

† Dublin Quart. Journ., May 1847, p. 324.

‡ Gazette Méd. de Paris, 6 Fev., 1847, p. 120.

branes, forming the true sac in empyema, are frequently thick and resisting, must have been observed by all in the habit of examining those who die of empyema; but the looseness with which these membranes are sometimes attached to the pleura would not, perhaps, be as readily noticed, unless in connection with the accident we are now considering. In a case that occurred to Dr. Sevetl during the present year, the false membranes were not only three or four lines in thickness, but dense and elastic like leather, and yet so loosely attached to the pleura that, by a slight pressure of the forefinger, they could be readily separated in the form of a complete sac.\*

20. *Treatment of Cysts by Iodine Injections.*—M. Callegari has long been an advocate of this treatment: he records cases of encysted tumour of the head and neck cured by it, and recommends the use of the trocar in preference to puncture with a bistoury, as being less liable to produce violent pain, inflammation and supuration.†

21. *Old Dislocation of the Femur on the Dorsum of the Ilium—No false joint.*—Dr. Francis‡ presented to the Manchester Pathological Society the ileum and corresponding femur of a middle aged woman, where dislocation of many years' standing had existed, but how brought about there was no means of learning, the patient being imbecile. It was certain, however, from collateral information from her friends, that the dislocation had existed many years. That part of the head of the femur which rested on the ileum was flattened, but there was entire absence of any appearance of attempt at the formation of a false joint. A partial obliteration of the acetabulum threw further light upon the antiquity of the displacement. Dr. Francis believed this to be third case only on record where dislocation of many years' standing had existed without a more or less perfect false joint.§

22. *A New Method of applying a Ligature to Tumours.*—Professor Fergusson and Mr. Walne have both described this method. It consists in passing a double ligature through the base of the tumour, and then dividing it; a needle with the eye to the point is then threaded with one *tail* of the ligature, and passed also through the base of the tumour at right angles to the double thread; this tail is withdrawn from the needle, and the eye threaded with the other *tail* of the double ligature; the needle is then drawn backwards, bringing with it the second ligature, which then passes at right angles to the original double ligature, and through the same channel as the first tail. The ends of the ligatures having been left long enough for tying, there are now two ligatures, forming two figures of 8, each embracing two opposite segments of the tumour, and the surgeon has only to tie the ends of each ligature once in order to command the base of the tumour.||

23. *Treatment of Panaris.*—Dr. Martin, surgeon-in-chief to the Military Hospital at Colmar, has employed, with the greatest success, a modification of M. Serres' method of treating *panaris*, by friction with mercurial ointment. Dr. Martin's plan is as follows:—Instead of having recourse to the inunctions every three quarters of an hour, and with a small quantity of the ointment, as advised by M. Serres, he recommends them to be made for five minutes at a time, at the same interval, and to be continued for two hours night and morning, the affected part to be covered with a poultice during the intervals. By this remedy, to the exclusion of almost all others, he has obtained the most remarkable success, and does not hesitate to say that he considers mercurial frictions specific in this painful affection.¶

24. *Hydrophobia.*—Mr. Ellis, of Dublin, has promulgated the startling doctrine that the saliva of a dog in perfect health, and in a state of tranquillity, when it neither bites nor attempts to bite, may, if applied to a wound, produce hydrophobia in the human subject.\*\*

25. *Salivary Calculi.*—M. Stanski published a memoir in 1846.†† the object of which was to prove that observers have been deceived as to the nature of sub-

\* Brit. Amer. Journ., April 1847, p. 327, from the New York Journ. of Med., Jan.

† Mem. della Med. Contemporanea, Aug. 1846.

‡ Ibid.

§ London Med. Gaz., May 7, 1847, p. 827.

|| London Med. Gaz., June, 1847, p. 195.

¶ Journ. de Med. et de Chirurg. Pratiques, Sept. 1845.

\*\* Brit. and For. Quarterly, Jan. 1847, p. 250.

†† Archives Générales.



stances extracted from the salivary passages; having met with a concretion, the nucleus of which was a tooth, the author concluded that the various calculi met with owe their origin to a similar cause. In the "*Gazette Médicale*" of the 15th of May, 1847, whilst noticing M. Stanski's memoir, doubts are cast upon his conclusions. M. C. Forget,\* having met with two cases of the kind, has made a collection of as many as 39 cases from different authors, and there are doubtless others, many of which have been analyzed without finding any trace of a tooth as a nucleus. M. Stanski's case, which is extremely curious, must accordingly have been an exception, being a foreign body accidentally introduced, and coated with calcareous matter, as occasionally happens in the bladder. These calculi have sometimes been met with in ranula, within the cyst, at other times in Wharton's duct; their composition is for the most part nearly the same, although sometimes the phosphate and sometimes the carbonate of lime predominates, and thus they very closely resemble the tartar which forms around the teeth. In one of M. Forget's cases, he believed he had to deal with a simple inflammation of the sublingual gland, which, on being punctured, discharged pus, followed by a calculus, the presence of which was not suspected; there had been no previous obstruction to the flow of saliva. The calculus was of an irregular ovoid form, and weighed about 44 grains, was formed of irregularly concentric layers, alternately white and grayish, generally very hard, but the most superficial layers most so.

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Watching the progress of Medicine and Surgery, we cannot avoid being struck with the fact that the instruments of physical science are becoming progressively more applicable in the diagnosis and treatment of injuries and diseases; this is illustrated in our present Report, and the period appears to be gradually approaching when many of the inert and useless drugs and preparations now in use, the remnants of mystical medicine, must be discarded from our surgeries and dispensaries, and their shelves replenished with the microscope, the stethoscope, the test-tube, and the blow-pipe, the clamp or compress, the inhaler, the electro-galvanic apparatus, and other instruments of science. With a more extensive and more accurate knowledge of the laws of vitality, and of the action of physical and chemical agents on the living system, a more rational system of medicine will thus become generally prevalent, to the honour of those who follow it as a profession. So soon as our records of medicine and surgery show that, in its full scope, practical medicine is based upon scientific and philosophical principles, and that our rationale of health and disease, our therapeutical indications and rules of art, are founded upon induction as well as experience, then will the line of demarcation between the pretender and the qualified practitioner be indelibly stamped; the phantasies of magnetism and homœopathy will vanish; he who is not of the profession will be out of it; and—what, notwithstanding the dreams of enthusiasts, has never yet happened since the world began,—the people will highly and justly estimate the legitimate professors of the healing art.

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## OPHTHALMIC SURGERY.

As no general Report on Ophthalmic Medicine and Surgery has been made since the commencement of the "Half-Yearly Abstract," we shall feel it incumbent upon us to render the present as comprehensive as our limits will allow. Numerous works have been published during the last few years on ophthalmic medicine, but it is neither consistent with our design, nor would it be advantageous, to make any further reference than to such as have reached us of very recent date. The most important of these, on the general subject, is unquestionably the "*Traité Théorique et Pratique des Maladies des Yeux*," by Professor L. A. Desmarres, an octavo volume of 900 pages, emanating from the Paris press of 1847. We have also before us a very excellent "Manual of the Principles and Practice

\* *Gaz. Med.*, July 24, 1847.

of Ophthalmic Medicine and Surgery," by Mr. T. Wharton Jones, bearing the same date; an Essay "On Cataract and its appropriate Treatment," by C. G. Guthrie; an Essay "On Cataract, Artificial Pupil, and Strabismus," by Dr. Brett; "Practical Remarks on Near Sight, Aged Sight, and Impaired Vision," by Mr. W. W. Cooper; a very interesting "Report on the Progress of Ophthalmic Surgery for 1846," by Mr. W. R. Wilde; and a great variety of monographs, and cases, observations, reviews and essays, on various subjects embraced in this department of medical science, contained in the British and foreign periodical journals.

—Desmarres has adopted a strictly anatomical classification of diseases of the eyes. The following table of the primary divisions of this author's treatise will indicate the scope and arrangement of the subject:

<p>PART I.—<i>Diseases of the Eyelids.</i></p> <p>CH. 1. Congenital or acquired deformities.</p> <p>2. Inflammations of the eyelids.</p> <p>3. Tumours of the eyelids.</p> <p>4. Syphilitic affections of the eyelids.</p>	<p>CH. 10. Diseases of the ciliary body.</p> <p>11. Diseases of the retina.</p> <p>12. General diseases of the globe of the eye.</p> <p>13. Functional derangements of vision.</p> <p>14. Diseases of the muscles of the eye.</p> <p>15. Diseases of the semilunar membrane, and of the caruncula lachrymalis.</p>
<p>PART II.—<i>Diseases of the Globe of the Eye.</i></p> <p>CH. 1. Diseases of the conjunctiva.</p> <p>2. Diseases of the cornea.</p> <p>3. Diseases of the sclerotica.</p> <p>4. Diseases of the anterior chamber.</p> <p>5. Diseases of the iris.</p> <p>6. Diseases of the capsule.</p> <p>7. Diseases of the crystalline lens.</p> <p>8. Diseases of the vitreous body.</p> <p>9. Diseases of the choroid membrane.</p>	<p>PART III.—<i>Diseases of the Lachrymal Apparatus.</i></p> <p>CH. 1. Diseases of the lachrymal gland.</p> <p>2. Diseases of the puncta and lachrymal canals.</p> <p>3. Diseases of the lachrymal sac and nasal canal.</p>

The arrangement adopted by Mr. Wharton Jones is very different; his Manual consists of the following chapters:

I. Sect. 1. Ophthalmoscopy, or exploration of the eyes, in order to a diagnosis. Sect. 2. Application of remedies to the eyes or their neighbourhood, and performance of minor operations on them. II. Ophthalmic inflammation. III. Sect. 1. Dropsies, tumours, cancer, &c., of the eyeball. Sect. 2. Cataract. Sect. 3. Operation for artificial pupil. Sect. 4. Congenital defects of the iris and pupil. IV. Sect. 1. Abnormal states of the optical refractions and adjustments of the eye. Sect. 2. Vision of objects in and on the eye. V. Amaurotic affections. VI. Loss of correspondence of the sensation and movements of the two eyes. VII. Diseases of the eyelids. VIII. Sect. 1. Diseases of the conjunctiva. Sect. 2. Diseases of the semilunar fold and lachrymal caruncle. IX. Diseases of the lachrymal organs. X. Diseases of the orbit. XI. Injuries of the eye.

In collating the various papers for the purpose of bringing the more important materials before our readers, we propose to follow, for the most part, the more strictly anatomical arrangement adopted by Desmarres.

The "*Traité Théorique et Pratique*" opens with a very full account of ophthalmoscopy, or the principles which should guide the surgeon in examining the eyes of ophthalmic patients, comprehending a succinct statement of the phenomena every structure comprising the eye presents naturally, with illustrations, under each head, of the more frequent morbid appearances. In order that the readers of the "*Abstract*" may understand wherein this work most essentially differs from the principles and practice of ophthalmic surgery long taught in this country, and adopted mainly from the German school, we may state at the outset, that Desmarres, after directing attention to the undoubted fact, that it is impossible to isolate the various inflammatory diseases of the eye, a point, by the by, much insisted upon by Dr. Jacob,\* and that although we retain the term *iritis*, for in-

\* On Inflammation of the Eye, Dublin Medical Press, 1846.

stance, there is no case of this disease in which five or six membranes are not involved; following his anatomical arrangement, he altogether repudiates and discards the specific nature of the different ophthalmias, and such terms as *rheumatismal ophthalmia*, *scrofulous ophthalmia*, *arthritic ophthalmia*, &c., adopted to so inconvenient an extent by the German ophthalmists; he considers that there are no anatomico-pathological characters by which these complications of the various inflammations of the eye can be distinguished. Such complications are only to be determined by a general examination of the patient, and by the modifications which the particular constitution produces on the course of the inflammation. In a therapeutic point of view, real mischief has been done by designating affections of the eye according to the general predisposition, even when this predisposition or complication really exists; in support of which assertion Desmarres quotes Weller, who, while he admits specific ophthalmias, remarks that "the results of the treatment of these affections would not be favourable if the physician began by prescribing generally for the arthritis, scrofula, &c., since the organ might be destroyed even before those remedies which are most indicated could so affect the general system as to relieve the disease with which the eye is affected." When inflammation of the eye exists, in particular constitutions, Desmarres admits and describes the modifications produced in the course, duration, prognosis, and treatment, and which follow as a consequence of these complications, but he denies in toto that they have any pretensions to be classed as distinct species, or even varieties of disease. This author's views on this head will be amply illustrated in the present Report. That our readers may be apprised of one or two of the leading features in Mr. Jones's Manual also, which may be taken as representing, as far as it goes, the state of ophthalmic medicine in this country, we may mention that in the second chapter, which comprises the whole subject of inflammation of the eye, whatever the structure affected, and of its sequelæ, a long account is given of inflammation in general, in which the more recently observed microscopical phenomena of the process are described. Upon these the author frames a theory of inflammation, which, if criticism came within the scope of this work, we should feel disposed to discuss very fully; but since it does not, we are only at liberty to remark, that in a Manual intended as a text-book for students, and as a book of reference to practitioners, it is a little too much to adopt such an hypothesis as that the exciting cause of inflammation primarily exalts the activity of the sensitive nerves, and secondarily, by reflex action, paralyses the motor nerves of the capillary vessels, and thus, by a suspension of nervous influence, produces a retardation of blood; and to adopt such an hypothesis as fundamental, which, notwithstanding Henle's authority, is doubted by some pathologists, and disbelieved by others.\* Mr. Jones distinguishes and designates the species and varieties of the ophthalmiæ principally by—1, the part which is the chief seat of the inflammation; 2, the co affected structures; 3, the exciting cause; 4, the state of constitution or constitutional disease; 5, the result. Hence we find in his nosography not only *scrofulous* and *rheumatic* ophthalmia, for instance, but *scrofulo-catarhul*, *catarrho-rheumatic*, *scrofulous posterior internal* and *arthritic posterior internal* ophthalmia, following most of our standard works, and especially those of the Germans, in their minute specific distinctions of the various inflammatory affections of the eye, which we have already stated Desmarres' work has the merit or the demerit of discarding.

## A.—DISEASES OF THE EYELIDS.

### § I.—Congenital or Acquired Deformities of the Eyelids.

These affections, as enumerated by Desmarres, are as follows:—1. *Ablepharon*; 2. *Cobdroma*; 3. *Anchyloblepharon*; 4. *Symblepharon*; 5. *Phimosis*; 6. *Lagophthalmos*; 7. *Epicanthus*; 8. *Ptosis*; 9. *Entropion*; 10. *Ectropion*; 11. *Trichiasis*; 12. *Absence or Fall of the Eyebrows*; 13. *Contusions and Wounds of the Eyelids and Eyebrows*.

The first and second Volumes of the "Half-yearly Abstract"‡ contain a condensed account of Mr. Wilde's papers on malformations and congenital diseases of the

\* P. 50.

† P. 71.

‡ Vol. i. p. 113; Vol. ii. p. 92.



organs of sight, from the Dublin Journal. Desmarres does not appear to be acquainted with Mr. Wilde's labours, since we do not find this gentleman mentioned through the whole work, which might have been rendered more complete had the author availed himself of his cases and observations.

1. *Epicanthus*.<sup>\*</sup>—Professor Von Ammon, of Dresden, first noticed and described this deformity, to which he attached the name it now bears. It consists in the existence of a semilunar fold of skin, whose concavity is turned outwards, and which sometimes advances so far as to cover the inner portion of the cornea. This fold is united at its convexity to the skin of the nose, at its superior extremity to the skin of the brow, and at its inferior extremity to the skin which covers the lower and inner edge of the base of the orbit. It results from this disposal that vision laterally is possible in one eye only, the other conceals itself in the internal angle under the cutaneous fold, which at the same time masks the caruncula. From the side opposite to the epicanthus we recognise that it is just so far distant from the eye as the latter is placed deeply in the orbit: so that it may be easy to pass the extremity of the finger between the globe and the posterior face of the fold. Epicanthus is congenital or acquired, monocular or double.

The congenital, according to M. V. Ammon, is simple, or complicated with paralysis or with strabismus. When acquired it may be divided, according to Desmarres, into permanent, the result of an alteration of the skin, of a burn, of a wound, or consecutive to a caries of the orbit, &c.: and into temporary when it is the result of an inflammation of the integuments (erysipelas, purulent ophthalmia, &c.)

Desmarres gives, from the "Annales d'Oculistique" (tom. vi. p. 236), a curious and rare case of temporary epicanthus.

"The epicanthus did not appear until the fifth day of a purulent conjunctivitis, at the moment when the inflammation was declining. During three days it advanced little by little towards the cornea, to such an extent that, when the child was looking straight before him, the middle of the semilunar fold formed by the skin covered not only all the inner portion of the sclerotica, but also about a line in extent of the cornea. Having made this progress for two days, the epicanthus remained stationary: when the fold began gradually to retrograde towards the inner angle, so that by the fourteenth day it did not cover more than the interior third of the caruncula lachrymalis. Finally, towards the twentieth day, the malady had disappeared, without leaving any trace."

The treatment of epicanthus is surgical or medical, according to its cause. When congenital, and exempt from complications, the operations of rhinoraphy proposed by M. V. Ammon, should be practised, which consists in seizing, on the dorsum of the nose, either with the fingers or forceps, a vertical fold of skin, sufficiently large to cause the deformity to disappear, and cutting it out with scissors. The loss of substance on the nose, of the form of a myrtle-leaf, is to be of variable extent, according to the size of the epicanthus. The union is effected by means of pins placed transversely, and sustained by the twisted suture.

This operation completely remedies the deformity; but should the epicanthus be monocular, it will suffice to take out the exuberant semilunar portion of skin by means of scissors, whose convexity will be calculated by that of the fold to be cut away, and the cicatrix consequent thereon will be hidden in the inner angle of the eye operated on.

Mr. Jones considers that it is seldom that epicanthus impedes the movements of the eyelids so much as to render any operation necessary.†

2. *Ptoſis*—*Blepharoptosis*—*Falling of the Upper Eyelid*.—Mr. Jones arranges the various cases of ptoſis under four heads: 1st, from paralysis of the third pair of nerves: 2d, from injury of the levator palpebræ: 3d, from extension or relaxation of the skin, or of the whole substance of the eyelid: 4th, congenital.‡ Desmarres recommends, for the cure of ptoſis depending upon extension or relaxation of the skin, cutting out a longitudinal fold from the middle of the transverse diameter, and the subsequent employment of sutures, although the latter were condemned by Scarpa and Menzel. He appears to be unacquainted with Mr. Hunt's proposal for the rectification of the deformity when occasioned by injury of the levator

\* Desmarres, lib. cit., p. 39.

† Lib. cit., p. 445.

‡ Lib. cit., p. 441.

muscle, which consists in the removal of a transverse fold of integument from the eyelid, of such an extent and from such a place that when the edges of the wound become united, the eyelid is attached to the corrugator muscle and to that portion of the skin of the eyebrow upon which the occipito-frontalis acts; so that the action of this muscle is substituted for that of the levator palpebræ.

Desmarres treats of ptosis from paralysis in his fourteenth chapter, "On Diseases of the Muscles of the Eye;" but we prefer reverting to the subject in this place. According to Mr. Jones, this form sometimes comes on after exposure to cold and damp, and may be properly viewed as of a rheumatic character (p. 397): but it may depend upon congestion, extravasation, effusion, tumours, &c., consequent to injuries of the head. This paralysis of the upper eyelid is the subject of a statistical memoir by Mr. J. J. France,\* who has furnished the profession with statistics of several cases, the first twelve of which present all the forms of this malady. It occurs equally in males and females, and is met with most frequently from twelve to twenty-eight years of age, and among those who by profession are exposed to fatiguing exertions, particularly at a high temperature. The causes could be determined in some only of the cases. One patient became affected after exposure to the sun: another after working at a gas furnace; a third, after a rather long march; a fourth, after the feet remaining in cold water for a long time: a fifth, in consequence of a blow on the head; a sixth, from a general cancerous affection. In these twelve patients, ten presented, at a period varying from a few days to some months, before the development of the paralysis, cerebral symptoms differing much in intensity; as headache, vertigo, tinnitus aurium, deafness, &c.; and in some cases there were signs of a deeper-seated affection of the head.

It occurs nearly as often in one eyelid as in the other. In nine of the cases the paralysis was limited to the motor nerve; in the sixteenth case the optic nerve was equally involved; in the eleventh there was almost complete paralysis of the optic and of the common motor-ocular nerve of the right side; this case was produced by a blow on the side of the head, and coincided with complete paralysis of the rectum and bladder; in the twelfth case all the nerves of the orbit were paralysed, which occurred without any cerebral symptoms, but there was disease of the post and sub-maxillary glands, and very probably the facial nerve, the inferior maxillary nerve, all the nerves of the orbit and the superior maxillary were compressed by a prolongation of the tumour into the spheno-maxillary sinus. Inflammation of the conjunctiva and destruction of the cornea, in this case, were probably owing to paralysis of the fifth pair.

The paralysis extended in all the cases, except one, over all the branches of the nerve. There was loss or disturbance in the adduction, elevation, and depression of the globe of the eye, as well as paralysis of the eyelid. The paralysis of the lid was complete in eight cases, incomplete in four. The paralysis of the globe, that is to say, in the branches of the common motor oculorum, complete in five cases; incomplete in seven. The pupil was almost constantly dilated, which proves the propagation of the disease to the ciliary nerves by the intervention of the ophthalmic ganglion. Still the sight, in general, was only slightly disturbed, if the diplopia resulting from the loss of parallelism of the ocular axis be excepted.

In reference to treatment, caution is necessary as to bleeding. Two patients bled largely derived but little benefit, while cupping, mercurials, purgatives, blistering the nape of the neck, &c., were followed by favourable results. The paralysis of the motor oculorum is sometimes of dangerous tendency; for of the twelve cases, one was followed by a fatal result, and seven were not cured, or only incompletely cured; four were completely cured; three in from fifteen to twenty-eight days, by the employment of powerful revulsives; the fourth by the ingenious operation resorted to by Mr. Curling, Mr. Hunt, of Manchester, and others, which consists in putting the paralysed fibres of the levator muscle of the upper eyelid under the command of the occipito-frontalis muscle. For which purpose, as already stated, a fold of skin is cut out of the lid, and the wound united with a suture. The lower part of the lid contracts adhesions with the corrugator muscle and also with the occipito-frontalis, and is thus brought under the command of the latter.

\* Guy's Hosp. Rep., and Encyclog. des Sciences Méd., Nov. 1846, p. 285.

3. *Entropium.—Inversion of the Eyelids.*—Mr. Wilde appears to have investigated the causes of this distressing disease with great care, and with a view to point out its diagnosis at a much earlier period than usual. He remarks that, when we look at a healthy eye, on a level with our own, the cilia of the upper lid should project so much forwards, that we should see but the dark line of fringe which their points form. If the eye be directed downwards, and the lid fall a little, the upper surface of these hairs comes into view. The eyelid forms two folds; the superior, large, flexible one, which is carried inwards by the action of the levator palpebræ; and the inferior, lesser one, which is generally about three-eighths of an inch deep, and to which the integuments are intimately attached.

When the lid drops, or is closed by a voluntary effort, the superior, large, loose, and flexible fold becomes obliterated. Now in persons labouring under the incipient entropium, long before any inversion or distortion of the lashes has taken place, the lower fold becomes preternaturally developed. And, moreover, if we examine such an eye in profile, we shall find that this fold has become not only more developed, but that its curvature, which in the normal state is but slightly convex in the infero-superior direction, has become preternaturally increased. This vicious bend of the inferior fold of the lid is often of years' standing before it is perceived. When we evert the lid the cause becomes manifest; immediately behind the line of the Meibomian glands we perceive a deep curve or hollow in the cartilage, running along the entire length of the lid.

This sulcus or depression in the cartilage has invariably a shining, tendinous appearance, and several conjunctival vessels may be seen running into it; and as the disease advances it has the appearance of a deep and rugged cicatrix, not unlike those marks which we perceive upon the inner surface of a lid which has been cured of granulations. All this time the conjunctiva lining the cartilage may be perfectly smooth, and scarcely more vascular than natural, while the tissues of the eye itself may never have suffered from disease. Chronic ophthalmia is, no doubt, at times a cause of entropium, but, the author believes, a much less frequent one than is generally supposed. Mr. Wilde has lately seen several cases of inversion, both in the incipient and fully-developed stage, in which there never had been any inflammatory affection of the ocular tunics. When the disease is fully established, this internal sulcus becomes more deeply developed. The subjective symptoms are but very trifling; the patient complains of little or no uneasiness until one or more of the lashes touch the globe. At times persons labouring under the incipient form complain of a tightness of the lid, and say that when they move it, they feel as if it scraped the eye. This tightness, however, is not caused by any shortening of the transverse length of the lid, but by its increased curvature from above downward.\*

—Desmarres gives a very minute account of this affection, which may either be partial or complete, and of which there are many varieties depending upon different conditions of the part; he also enumerates a great many remedies,† including the application of topical astringents, bandages, the actual cautery, as recommended by Celsus, and several kinds of operation. The latter are described most minutely, and each operation is adapted to the variety of the affection for which it is intended as a remedy. Mr. Wilde states that neither caustics nor astringents effect any good in the early stage, but he thinks he has succeeded in arresting the progress of entropium by the application of nitric acid to the integuments covering the fold externally.

4. *Ectropium.—Eversion of the Eyelids.*—It would occupy half our space to describe the different operations performed by different oculists to remedy the various forms of ectropium. Desmarres gives minute particulars of operations performed by Antyllas, Dieffenbach, Adams, Celsus, Chelius, and Von Ammon, most of which are well understood by the ophthalmic practitioner. Mr. Jones is also particularly full on this subject: in ectropium from contraction of the skin, in consequence of bad cicatrices, &c., after mentioning some of the operations just referred to, and the plan of transplantation of the skin performed successfully, in some cases, by Dr. Fricke, of Hamburg, Dr. Mackenzie, and others, Mr. Jones describes his own —

\* Dublin Quart. Journ., Feb. 1847, p. 224.

† Lib. cit., p. 50.



5. *Operation for the Cure of Ectropium.*—The peculiarity of the plan consists in the following particulars:—The eyelid is set free by incisions made in such a way, that when the eyelid is brought back into its natural position, the gap which is left may be closed by bringing its edges together by suture, and thus obtaining immediate union. Unlike the Celsian operation, the narrower the cicatrix the more secure the result. The flap of skin embraced by the incisions is not separated from the subjacent parts, but advantage being taken of the looseness of the subcutaneous cellular tissue, the flap is pressed downwards, and thus the eyelid is set free. The success of the operation depends very much on the looseness of the cellular tissue. For some days before the operation, therefore, the skin should be moved up and down, in order to render the cellular tissue more yielding.\*

On the 22d of February, 1846, Mr. Jones operated on the *left* upper eyelid. Two converging incisions were made through the skin, from over the angles of the eye upwards to a point where they met, somewhat more than an inch from the adherent ciliary margin of the eyelid. By pressing down the triangular flap thus made, and cutting all opposing bridges of cellular tissue, but without separating the flap from the subjacent parts, Mr. Jones was able to bring down the eyelid nearly into its natural situation, by the mere stretching of the subjacent cellular tissue. A piece of the everted conjunctiva was snipped off. The edges of the gap left by the drawing down of the flap were now brought together by suture, and the eyelid was retained in its proper place by plasters, compress, and bandage.†

The following is set forth in the Journal quoted from as new, and we find Desmarres remarking that he has no doubt ectropium from disarrangement of the fibres of the orbicularis muscle is very common.

6. *New Mode of Operating for Ectropion, by Dr. Blasberg* ‡—This writer ascribes the formation of ectropion not to those various causes which are generally considered as apt to produce it, but rather to a peculiar condition of the orbicular muscle. He is inclined to think that the proximate cause of ectropion consists in a prevailing contractile power in the fibres of the orbicularis which surround those that form the ciliary portion of the muscles. In a man, æt. 50, with sarcomatous ectropion, Blasberg, finding a furrow below the ciliary margin of the lower lid, which became deeper every time the patient closed his eyes forcibly, made a vertical incision in the lid, and finding some of the fibres of the orbicularis much contracted, he divided them, and cured the ectropion. In another case he made a horizontal incision, about three quarters of an inch long, and having exposed the orbicularis, he divided at three different places some of its fibres which were most developed, and which were situated at about a line below the ciliary margin. In a short time the ectropion disappeared.

7. *Blepharoplasty.*—In an article with this title, Desmarres gives an account of the various modes of performing those operations, the object of which is to repair a loss of substance in the upper eyelid, or to cure the various deformities produced by entropion and ectropion. This operation has been performed by Graefe (1817), Fricke (1829), Jüngken, Rust, Peters, Langenbäck, Blasius (in Germany), Hysern (in Spain), Blandin, Velpeau, Bérard, Jobert de Lambelle (in France), and Jones (in England). Desmarres states that in most cases it has diminished the deformity, but that it rarely destroys it, especially when performed on the upper eyelid; and that it should never be resorted to unless some real advantage is to be secured, since it implies extensive incisions, the minute dissection of a large surface, and numerous sutures. The various operations may be arranged in three classes. 1st. The method of Fricke, by torsion of the flap. 2d. The method of Dieffenbach, by inclination of the flap. 3d. The method of Jones, by extension of the flap. Mr. Jones's method, which is the most novel, has been described.§

## § II.—Inflammation of the Eyelids.

The varieties of inflammation of the eyelids admitted into Desmarres' nosology are, 1, *Blepharitis*, or simple inflammation; 2, *Ciliary Blepharitis*; 3, *Erysipelatous Blepharitis*.

\* Ophthalmic Medicine and Surgery, p. 418.

† Gaz. Med. di Milano, Feb. 27, 1847.

‡ Ibid., p. 419.

§ Lib. cit., p. 418.

8. *Ciliary Blepharitis—Glandulo-ciliary Inflammation of the Eyelids—Scrofulous Blepharitis, &c.*—This inflammation has received various names from different writers, and, according to the present author, it has been treated of fully, by none. It is only at its commencement that it is essential and well marked; subsequently it becomes complicated with diseases of the eye itself. It comprises the *psorophthalmia*, *ophthalmia tarsi*, *scrofulous ophthalmia tarsi*, *tinea ciliaris*, *tylosis*, or *callosity of the eyelids*, and many other varieties differently designated. Desmarres describes its anatomical symptoms in their first, second, and third degree, with their complications, including glandular abscess, obliteration of the orifices of the Meibomian glands, calculi of the Meibomian glands, ulcers, callosities, chalazions, and diseases of the eyelashes; its physiological symptoms; its cause and duration: etiology: differential diagnosis: terminations: treatment. Amongst the internal causes of this affection the scrofulous constitution plays a principal part, although it may occur in persons enjoying the best of health. It can be confounded with no other affection, and having the greatest affinity to the granular ophthalmia, the differential diagnosis of the two diseases is still easily made.

Too much reliance must not be placed on general treatment, but recourse must be had to local applications, for the purpose of obtaining immediate relief. If ever a very slightly granular state of the conjunctiva exists, at the same time that astringent collyria are employed, the surface of the granulations must be touched with sulphate of copper or nitrate of silver. These remedies should also be applied to the free edge of the eyelid, the dried crusts at the base of the eyelashes being softened and removed as fast as they form, which may be effected with emollient cataplasms. If this simple treatment is persevered in, the redness diminishes, and if organic changes have not taken place, the normal condition will be re-established. Every kind of treatment fails if the crusts are not removed; no ointment or application of any kind can be of the slightest use if not applied to the surfaces covered by the crusts, so that such remedies should not be resorted to until after the inflammation is subdued, or only in the short period which elapses between the removal of one crust and the formation of another. When the healthy state of the lid is nearly re-established, red precipitate ointment and analogous preparations may be employed with advantage.

All these means are ineffectual when the affection has reached its third degree, and numerous deep ulcers run into each other, attended with fistulous passages leading to the Meibomian glands, in which stage the eyelashes, nearly or completely destroyed, ride across each other: a more energetic treatment is then necessary, the ulcerations must be separately cauterized with solid nitrate of silver, very finely pointed, and dipped in water: every second day repeating the cauterization of any ulcerations which may have escaped: a stilet charged with caustic may also be inserted into the fistulous passages. Marked amelioration, and frequently a complete cure, follows the sustained employment of these remedies. When, in spite of all, the eyelid remains tumefied, multiplied punctures may be made on its free edge, and repeated two or three times a week. Desmarres has cured a good number of cases by this measure, when the patients were willing to submit to the pain occasioned by the punctures.

9. *Erysipelas of the Eyelids—Erysipelatous Blepharitis.*—Desmarres remarks that it would be easy for a person who has not studied the subject to mistake erysipelas of the eyelid, with suppuration of the subjacent cellular membrane, for a purulent ophthalmia, if, as frequently happens, the Meibomian glands and sebaceous follicles are at the same time secreting a muco-purulent liquid: yet it is only necessary to examine the under surface of the eyelid, the neighbouring inflamed parts, and the eye itself, by means of an elevator, in order to distinguish the difference. One of the most unfavourable terminations of erysipelas of the eyelids is the formation of an abscess in the cellular tissue of the orbit—death may be the consequence. A less serious, but more frequent complication, is the extension of the inflammation to the conjunctiva, which constitutes the *erysipelatous ophthalmia* of some authors, but which Desmarres considers ought not to find a place in our nosologies. He considers that the descriptions given by Mackenzie, Middlemore, Beer, Weller, and others, are insufficient to establish a special inflammation of the eye, of this nature. Sechel's description, who thinks erysipelas of the eye may develop itself independent of any affection of the eyelid or face, confirms

Desmarres' opinion, and he considers that Velpeau has done great service to ophthalmic medicine, by refuting the doctrine generally admitted.

—Wharton Jones\* states that erysipelatos ophthalmia is not of frequent occurrence. Infiltration of serum into the substance of the conjunctiva and subjacent cellular tissue, with serous chemosis, the cornea appearing half buried with it, appears to be the most remarkable objective symptom; but Desmarres remarks that the chemosed state of the conjunctiva, and its infiltration with a serous fluid, occur in simple serous chemosis which accompanies granular ophthalmia, proving that erysipelas of the eye, either with or without erysipelas of the eyelid, has no existence, since its distinctive characters are common to other affections. (p. 120.)

In severe cases of erysipelas of the eyelids, Desmarres advocates the most energetic local treatment, consisting of deep transverse incisions extending from one side of the eyelid to another, and if there is reason to fear suppuration of the orbit, they may be carried through the eyelid, between the eye and the orbit, and the most fatal results may thus be prevented. In some exceptional cases, where phlegmon of the eye is the consequence of the disease, a bistoury may be plunged into the inferior part of the sclerotica, by which the spontaneous bursting of this membrane, or of the cornea, may be prevented, and the patient's eye or his life saved.

### § III.—*Tumours of the Eyelids.*

These are either—1. Inflammations; including *Hordeolum*, the common sty, *Furunculus* and *Anthrax*. Or. 2. *Non-inflammatory*; including *Echymosis*, *Œdema*, *Warts*, *Sebaceous Vesicles* and *Miliary Tubercula* at the edges of the eyelids, *Cysts*, *Chalazion*, *Scirrhus* and *Cancer*, and *Erectile Tumours*.

10. *Cysts of the Eyelids*.—Desmarres states that nothing is less true than the general opinion of authors, that it is useless to attempt the resolution of encysted tumours of the eyelids, and, in spite of the opposing authority against it, medical treatment should in the first instance be resorted to. He has obtained their dissolution by mercurial frictions repeated regularly night and morning, replaced from time to time by an ointment of ioduret of potassium or of lead; in some cases also acupuncture has been added to these remedies, and the resolution has been effected rapidly, although in others, the whole of these measures failed. Mr. Wilde has given a fair trial to the ointments recommended by Desmarres for the dispersion of tumours in the palpebræ, but in his hands they have invariably proved inefficacious.†

To obviate the inconveniences which the operator experiences, in dissecting out these tumours, from the rapid flow of blood, Desmarres has invented an instrument, by the use of which all hemorrhage may be prevented. It is essentially a pair of forceps, one branch of which terminates in a metal plate to be placed under, and the other in a ring to be placed over the eyelid, the ring to include the tumour. There is a screw at a convenient distance from the termination of the branches, by which the ring can be screwed towards the plate, and when adjusted on the eyelid, the circulation in the tumour may be thus completely arrested. With the use of this instrument the dissection is effected as easily as on the dead body.

### § IV.—*Syphilitic Affections of the Eyelids.*

These consist of—1. *Syphilitic Ulcers*; 2. *Condylomata*; 3. *Syphilitic Eruptions*.

Having thus placed before our readers some of the most interesting materials of recent date, relating to the diseases of the eyelids, with a few of Desmarres' more original observations, we cannot better conclude this part of the subject, than by generalizing some remarks made by the author in reference to the various operations for ectropion. With respect to these, as well as the other numerous operative proceedings now resorted to, especially by continental oculists, although frequently trivial in themselves, and generally unattended by any serious complication, yet occasionally, and especially when a considerable portion of the palpebral integuments are raised, serious accidents occur; as erysipelas, phlegmonous

\* Lib. cit., pp. 74, 118.

† Report in the Dub. Quarterly Journal, Feb. 1847, p. 228.



ophthalmia, &c., becoming the most important part of the case, and sometimes resulting in cerebral symptoms of the greatest danger. It is therefore necessary, both before and after the operation, to put the patient in the best possible condition to avoid these unfortunate results; and it should be added, that it may be taken as a principle deduced from the opinions of the best modern ophthalmic surgeons, that such operations should never be undertaken except where they are clearly indicated, and the patient is to derive from them some very decided beneficial result.

## B. DISEASES OF THE GLOBE OF THE EYE.

### § V.—*Diseases of the Conjunctiva.*

This chapter comprises: 1. *Conjunctivitis*; 2. *Granulations*; 3. *Pannus*; 4. *Pterygium*; 5. *Pinguecula*; 6. *Serous Chemosis*; 7. *Phlegmonous Chemosis*; 8. *Foreign Bodies* in the Conjunctiva; 9. *Echymosis*; 10. *Dacryolithes*—Calcareous Concretions; 11. *Xerophthalmia*—Dryness of the Conjunctiva.

11. *Conjunctivitis*.—The following is Desmarres' simple and practical arrangement of the different forms of inflammation of the conjunctiva:

Conjunctivitis.	1. Pure or phlegmonous.		
	2. Pustular.		
	3. Granular or catarrhal	{ Contagious. Non-contagious. Miasmatic.	{ Erysipelatous. Variolous. Morbillous. Scarlatinous.
		{ Exanthematic	
	4. Purulent.	{ Of new-born infants. Gonorrhœal. Egyptian.	

*Pure Conjunctivitis* may terminate in resolution, or become chronic or complicated with serous chemosis, corneitis, phlegmonous chemosis, iritis, capsulitis, or hypopyon. It may become a general ophthalmitis with retinitis, fever, and delirium, and may result in a complete destruction of the eye or of any of its most important membranes; or, under more fortunate circumstances, resolution may occur as completely as in the original and simple affection.

*Pustular Conjunctivitis* is the early stage of the serofulous or phlyctenular ophthalmia of other authors, and as such it deserves peculiar attention; the early formation of the phlyctenule are admirably described. So long as the disease is limited to the conjunctiva, Desmarres remarks that it is extremely mild, rarely continuing longer than from eight to fifteen days, and terminating in resolution; although occasionally the pustules which occur at the edge of the cornea pass into ulceration; it is when the disease extends itself to the cornea and other membranes that it becomes so severe and obstinate, new symptoms being added, and new indications of treatment set up. Desmarres remarks that this might be designated the ophthalmia of early age, for it undoubtedly occurs most frequently in children. The same causes which give rise to simple or granular ophthalmia in the adult, produce pustular ophthalmia in lymphatic and feeble children; serofulous children are most predisposed to it, and it is rarely met with in adults of any constitution.

Although we shall be compelled to anticipate some part of our subject belonging to future sections, we cannot do better than place before our readers, under this head, a condensation of Dr. Jacob's views respecting serofulous ophthalmia.

12. *Serofulous Inflammation of the Eye*.—Dr. Jacob, in describing this affection as it actually occurs, states that the eyeball is sometimes the seat of a species of inflammation justly entitled to the denomination of serofulous, from its symptoms and results; but, he says, it may be assumed that it is not so much a local outbreak of serofula as an inflammation caused by exposure to cold, and modified by that disease, and thus at the outset we observe that there is not so great a

difference of opinion between Dr. Jacob and Desmarres; the former proceeds to say that while it cannot be denied that the eyeball is sometimes the seat of scrofulous disease, it may at the same time be doubted whether it is so frequently attacked by it as is generally supposed; for in many cases assumed to be of this nature there is really no evidence of the existence of any such malady, either in the system at large or in the part affected. In treating of scrofulous inflammation of the eye, it becomes necessary to inquire whether the practitioner can form a correct diagnosis from the changes in vascularity, diminution of transparency, or alteration in colour of the structures engaged. The common practice of assuming that certain forms of inflammation of the eyeball and conjunctiva are scrofulous, because the patient does not appear to be in a vigorous state of health, or because the disease does not yield to depletion or other usual remedies, leads to erroneous views and unsuccessful practice, and should be abandoned. No inflammation of the eye should be pronounced scrofulous unless the local disease or the constitutional peculiarities fully justify it.

The object should be to determine how far the treatment is to be modified in consequence of constitutional diathesis. To establish the existence of scrofulous disease with this view, it may not be necessary to have evidence of the presence of scrofulous tubercle, or other conclusive proof of the active progress of the malady; but there should be some more characteristic marks of it than those afforded by the tint of skin or the general formation of the body. A thick upper lip, brawny prominent cheeks, and tumid nose, accompanied by coarse, greasy, and dingy discoloured skin, will, when present, enable the practitioner to form an estimate of the state of the constitution; and if cutaneous excoriations at the angles of the mouth and margins of the nostrils, as well as at the edges of the eyelids and about the ears be also present, causing enlargement of the lymphatic glands beneath the chin and angles of the jaws, little doubt need remain of at least a predisposition to the specific malady. Extreme transparent delicacy of the cutaneous surface, permitting the subjacent blue veins to appear ramifying beneath it, and displaying a florid brilliancy of colour of the cheeks and lips, is evidence, if not of that diseased state of the system, at least of a very feeble state of the constitution, entailing great liability to destructive local inflammatory action.

Many who pronounce an inflammation of the eye to be scrofulous, probably do not mean to assert that there is scrofulous deposit in the lymphatic glands, or any other form of local disorganization or constitutional condition undoubtedly of this nature; they probably only mean to intimate that the inflammation is of peculiar character, because the subject of it presents certain appearances of defective bodily health, that the inflammation will pursue a protracted and destructive course, because the powers of assimilation and growth are weak, the circulation feeble, and consequently the entire frame destitute of vigour. Deposition of fat, instead of growth of muscle, pallid skin, and feeble circulation, in consequence of ill-assorted or deficient food, and defective respiration, are indications of a state of constitution calculated to modify the local inflammation as much as any positive proofs of the existence of specific scrofulous disease. This state of the system, so often assumed to be scrofulous, is of such frequent occurrence, and is so often the forerunner or cause of the development of real scrofula, that its identification with that disease need not cause surprise, and the practitioner, in adjusting his treatment, may with safety resort to the same measures in the one case that he employs in the other. It is important to determine what are the peculiar symptoms and effects observed in inflammation of the eye caused or modified by scrofula. With this view the practitioner should observe whether or not any one part of the organ is more engaged than another; whether the inflammatory action is intense and acute, or slow and languid; and whether the changes in organization are slight and of ordinary character, or considerable and unusual. In persons either of scrofulous habit or of feeble frame, the parts which suffer most are those situated most anteriorly, such as the cornea, membrane of the aqueous humour, and iris. True circumscribed corneitis and inflammation of the lining membrane of the chambers of the aqueous humour, causing adhesions of the margins of the pupil to the capsule of the crystalline lens, are more frequently caused or modified by this state of the system. The retina, it is true, is not unfrequently attacked by slow, destructive, and insidious inflammation under similar circumstances, but general

and severe inflammation, involving the entire organ, is oftener of a simple idiopathic, or of a rheumatic or syphilitic character. Any form of inflammation of the eye may be modified by a serofulous diathesis, but these insulated affections appear to be more frequently so influenced than others. The sclerotic also appears to give way more frequently from protracted inflammation, and to permit the choroid to project in the form of black, prominent tumours, in persons of serofulous constitution or debilitated system.

Dr. Jacob continues:—The remarkable increase in red vascularity of the sclerotic, which accompanies all other inflammations of the eyeball, is present in the serofulous form also. In the more transient and languid attacks, which appear confined in a great degree to the membrane lining the chambers of the aqueous humour, and which disappear after causing adhesions of the margin of the pupil to the capsule of the crystalline lens, this vascularity is very slight, often indeed scarcely to be perceived; but in more severe attacks, and where the iris or the cornea, or both, are engaged, the characteristic sclerotic vascularity is displayed as conspicuously as in any other species. The redness, however, is in general somewhat different from that observed in simple uncomplicated inflammation occurring in a healthy subject. The colour has less of the florid arterial tint, and more of the purple shade derived from venous turgescence; and it is also more uniform and diffused than confined to vessels converging to the circumference, as in syphilitic iritis and other varieties. It sometimes, also, especially where the cornea is particularly engaged, commences in a circumscribed spot at one side, which is followed by a similar one at the opposite, and ultimately by general redness of the entire membrane. This is a remarkable character of the disease.

Insulated inflammation of the cornea, the true *corneitis* of writers on diseases of the eye, appears to take place always in persons exhibiting marks of serofulous constitution, or of such languor or debility of the frame as is equivalent to such a state.

It is not the gray margin, described as frequently found bounding the circumference in inflammation of the eye in advanced life, and considered to be characteristic of the rheumatic or gouty species, that is to be observed, but a general haziness or milky hue, and a remarkable roughness or loss of polish on the surface of the conjunctival layer, or a slight loss of transparency, having more of a yellowish tint, as if some very slight effusion had taken place in the structure of the part. Very deep-seated, small, white opacities, generally in or near the centre, are sometimes to be seen. The consequences of these attacks often prove that the disease has extended to the cornea, that part of the organ often losing its correct curvature in protracted and unmanageable cases, or becoming prominent or conical in common with the anterior portion of the sclerotic, or separately. It also, in cases of long duration, is pervaded by vessels carrying red blood, and becomes permanently opaque.

In serofulous inflammation of the eye, or in simple idiopathic or other inflammation modified by a serofulous diathesis, or by a languid state of the functions of circulation and nutrition, the membrane lining the chamber of the aqueous humour is as much affected as in the most acute attacks in healthy and robust subjects. This is displayed by a muddy or hazy appearance of the cornea, caused by opacity of this membrane, where it covers or lines its posterior surface, as well as by the adhesions which form between the margin of the pupil and the capsule of the crystalline lens. This diffused muddy or hazy appearance which so frequently presents itself in syphilitic, and sometimes in simple idiopathic inflammation, does not perhaps occur so frequently in the serofulous form; but it sometimes does occur, and is easily recognized. When the cornea is much engaged, an opacity sometimes exists on its posterior surface, in the shape of a small, distinct, white, circumscribed spot; but this may be in the elastic layer of this part, or in its proper structure. The mottled opacity which remains in the shape of delicate specks on the back of the cornea, after the inflammation subsides, and which is particularly noticed in describing the symptoms of idiopathic and syphilitic inflammation, often remains after serofulous inflammation also. Adhesions of the margin of the pupil to the capsule of the lens take place very generally, and sometimes in consequence of very slight and transient attacks. Strong and extensive adhesions occur in the eyes of females of feeble constitu-



tion at an early period of life, who, when questioned on the subject, declare that they never had any pain or redness of the eye, notwithstanding the defect of vision which accompanies this state of parts. Dr. Jacob does not think there is hypopyon or effusion of purulent matter into the aqueous humour in scrofulous inflammation; the nature of the disease does not, however, render such an occurrence improbable.

The iris in this, as in all other forms of inflammation of the eyeball, is particularly affected, and the changes in colour, as well as the contraction and adhesions of the pupil, are as conspicuous. It is, however, in scrofulous inflammation alone that deposits resembling those which take place in syphilitic iritis, commonly assumed to be coagulable lymph, take place; but in scrofulous inflammation the deposition, when it occurs, is not of the same nature as in the syphilitic disease. It is, in fact, of the nature of true tubercular matter, and instead of being absorbed, as the matter is in syphilitic iritis, it increases in bulk, and either bursts as an abscess externally, or sometimes, but very rarely, into the aqueous humour. *This is the most characteristic and unequivocal proof of the scrofulous nature of the disease*, so much so, that all other changes in structure are but corroborative evidence of its specific nature, taken in connection with constitutional symptoms. The tubercular deposition generally takes place towards the circumference of the iris, near its junction with the ciliary ligament, and consequently under the margin of the cornea. It is at first a small, yellow, irregular mass, with red vessels passing over it, as in the deposits in syphilitic iritis; but it gradually enlarges and extends under the margin of the cornea, beneath the sclerotic, which gives way before it, and allows a prominent yellow mass to project beneath the conjunctiva. This continues to enlarge, and assumes the appearance of an abscess, and in some cases becomes so prominent and irregular in form, is so enveloped in large and tortuous vessels, and presents so peculiar an appearance, from the dark choroid coat appearing through the thinned sclerotic around it, that it has sometimes been supposed to be of malignant character.

In the case of an unmarried lady, of about 20 years of age, the whole eyeball became filled with a firm yellowish mass, presenting all the appearance of scrofulous tubercle, and suppurating at several points, so that Dr. Jacob could pass a probe, in different directions, nearly from one side to the other. The contents gradually crumbled down, and escaped with purulent discharge, leaving ultimately a shrunk and retracted sclerotic in the bottom of the orbit, and so little of any other morbid condition that she was able to wear an artificial eye without any uneasiness. In a scrofulous girl of 8 or 10 years of age, a yellow tubercle, the size of a small pea, formed in the iris during inflammation, and burst near the margin of the pupil, allowing the contents to project into the aqueous humour, in which, however, it was not diffused, but remained in a solid state until it was ultimately absorbed.\*

13. *The Treatment of Inflammation of the Eyeball in a truly Scrofulous Subject.*—In treating inflammation modified by a scrofulous diathesis, or even by that languid or defective condition of the nutritive functions which is often assumed to be scrofulous, Dr. Jacob suggests a great degree of caution. A patient, otherwise in vigorous health, may be, and often is, benefitted by local or even sometimes by general bleeding; but such a subject may also suffer from it, if it has not the effect of arresting the inflammatory action. The sudden abstraction of blood, by diminishing the activity of the capillary circulation, will often cause local inflammation to abate, or even to cease altogether: but if it has not this effect, it often contributes to produce that state of the system which leads to the deposition of serum, pus, or lymph, or even of tubercle, and more frequently in scrofulous than healthy subjects. In such subjects also bleeding appears to have less effect in causing the inflammation to abate or cease: this is especially to be observed when bleeding is resorted to after the inflammation has existed for some time. If resorted to at all in this form of inflammation, it should be at the earliest period, and with the view of suddenly weakening the heart's action, and thereby diminishing the activity of the capillaries, rather than for the purpose of suspending nutrition, or interrupting the salutary and ordinary functions of the circulating organs. The

\* The Dublin Med. Press.

local abstraction of blood by leeches or cupping may be adopted with less risk of bad consequences; but in neither form is this resource to be relied on.

The practice so generally pursued of suspending the processes of growth and nutrition by denial of the usual quantity of food of proper quality to arrest inflammatory action, also requires reconsideration when it comes to be applied in scrofulous subjects more particularly. It should be recollected that persons cannot continue to live without a renewal of their blood circulating in their vessels, and it is obvious that such renewal can be effected only by the administration of food capable of affording such blood. A sufficient supply of ingredients necessary to sustain life is also required to maintain a healthy state of the system, and without such healthy state inflammatory action cannot be controlled or prevented from proceeding to the extent of effecting destructive changes of organization. The practitioner should not, in scrofulous subjects, interdict for any length of time the use of nutritious food in sufficient quantity to supply the incessant expenditure of its elements by secretion and excretion. The sudden and total discontinuance of animal and vegetable materials necessary to sustain life or preserve health, and the substitution of those incapable of doing so, such as are commonly called slops, should not be permitted. The peculiar character of inflammation in scrofulous subjects is its not yielding in a short time, or in a distinct way, either spontaneously or to remedies, but rather gradually diminishing in intensity, or becoming chronic. We should, therefore, provide for its consequences by sustaining the strength and health of the patient. Animal food should not be interdicted; it should not be given, especially at the commencement, in such quantity as to risk even a temporary increase in the quantity of the circulating fluids, and thereby to induce increased action of the heart and corresponding activity of the capillary currents. The patient should have as much nutritious food as will secure the supply of the necessary quantity of blood of good quality to his system. Sudden and extensive change of diet should be avoided for another reason. The stomach and alimentary canal may have their ordinary functions disturbed or interrupted by the discontinuance of the usual digestible food, and the substitution of new and less agreeable aliments, and experience has fully proved that nothing contributes more to the destructive progress of inflammatory action than such disturbances. These observations are applicable to the treatment of all forms of inflammation of the eyeball, although Dr. Jacob has reserved them for the present occasion, because it is in the scrofulous form of disease the necessity of attention to the digestive, absorbent, and nutritive functions becomes more urgent.

Respiration of pure air frequently changed, the maintenance of the necessary amount of animal heat, and exposure to sufficient light, should not be neglected. It is not only in the close, crowded, and uncleanly dwellings of the poor that attention to respiration of pure air is demanded, the sleeping-rooms and nurseries of affluent persons frequently require as much care, badly constructed as they generally are for the attainment of this object, and incumbered, as we frequently find them, with window and bed-curtains, carpets, and unnecessary furniture. The maintenance of a salutary amount of heat in the system, especially in young persons, requires attention also, difficult as it often is to secure it, in consequence of the direction of the current of air flowing from the doors and windows to the fireplace. A temporary screen, with the necessary clothing and bed covering, and in winter a fire of sufficient strength, will enable the attendants to effect this object. The exclusion of light, or immuring the patient in total darkness is generally considered an essential part of the treatment in all inflammations of the eye, yet the practice is founded on erroneous views. That light must necessarily cause pain, and consequently irritation, if admitted into an inflamed eye, is a mistake. It often does produce this effect, especially in the advanced stage of disease, and in peculiar forms of it, but as often do we find no inconvenience experienced by its presence. Therefore light is not to be excluded, but merely as a precaution the sun-blinds are to be let down, or the patient is to sit with the back to the window or candles, as long as no complaint is made of pain from exposure; in the majority of cases distressing intolerance of light is induced by rendering the eye more sensitive to it by the use of shades and curtains. These observations respecting diet and general management are more applicable to what is called the after-treatment than to the first attempts to arrest inflammation. The rule from the

very commencement should be to avoid as much as possible making the patient an invalid, and in all cases where the practitioner can venture to do so, he should treat the patient without confinement to bed or bedroom, and even, if the weather be fine, allow exercise out of doors in shaded situations.

Antimonials, mercury, iodine, turpentine, iron, cinchona, sarsaparilla, guaiacum, and even colchicum, may be made as available, with the necessary limitations which circumstances demand, in scrofulous as in the idiopathic, syphilitic, or rheumatic species. It is necessary, however, to suggest some modifications of these agents, to adapt them to the treatment of this form of disease. In a well-marked acute attack of iritis, or inflammation of the eyeball, occurring in a scrofulous subject, mercury must be given as under similar circumstances in other varieties, but the practitioner should not forget that he has to deal with a constitution which will not ultimately bear with impunity the effects of this remedy as well as the ordinary or healthy one; and also that the beneficial effects of a full and free course of mercury are not so decisive as in a sounder state of the system. The medicine should be more cautiously introduced, unaccompanied by that debilitating treatment so often adopted in other cases, and it may even be given in combination with tonics, and during the use of nutritious food. The preparation requires consideration. The blue pill, with or without opium, as the state of the bowels demands, will generally prove sufficient, and in less acute cases the compound calomel pill may be found preferable. Corrosive sublimate has been much extolled in the more chronic forms of inflammation, both of the eye and conjunctiva, but as the advocates of it generally direct it to be dissolved in tincture of cinchona, by which it is of course decomposed, no evidence of its superiority is afforded. Iodine, in scrofulous inflammation, should be more relied on, if confidence is to be reposed in the opinion entertained respecting its virtues in this disease generally. A practitioner would not be justified in relying on iodine in any form as a means of arresting in its first stage acute inflammation of the eyeball, caused or modified by scrofula, but he may place reliance in it as an aid in the more advanced stages, either in combination with or following mercury. The plan is to give mercury in moderation, until it begins to produce its usual effects, and then to commence with the iodine of potassium. Five grains of the pilula hydrargyri three times a day, until the gums become affected, and then continued in five-grain doses, at night only, giving from five to ten grains of the iodide of potassium in the morning and middle of the day. After this has been persevered in until the mercury has had a fair trial, the pill at night is discontinued and the iodide substituted for it, either alone or in decoction of bark, if the stage of the disease and the state of the constitution demand it; or the iodide of iron in syrup, in the dose of three or four grains daily, is given. In those cases in which the inflammation is a repetition of former attacks, or a relapse, or where it has become refractory and chronic, mercury having been freely and repeatedly used before, the iodide of potassium or iodide of iron affords an obvious resource, and under such circumstances effects as much as could be expected from any other remedy.

In the more advanced stages, or even at an earlier period, if the disease does not yield to the remedies above enumerated, tonics and nutritious food, removal to a more healthy locality, and every other means usually resorted to in scrofulous affections must be adopted. Cinchona or other vegetable tonics, in such forms as the practitioner may consider best suited to each individual case, may be employed with advantage; and iron, either alone or in combination with other remedies, should have a trial. Patients residing in large towns should be removed to the country, and even from one locality to another differently situated. As to local treatment, little remains to be added, except, Dr. Jacob\* says, enjoining more caution as to the application of blisters, which, in scrofulous subjects, so often are the cause of enlargement of the cervical glands.

14. *Granular Conjunctivitis*.—This is neither more nor less than a catarrh of the conjunctiva, resembling in every respect affections of the same nature in other mucous membranes; it may terminate by resolution, but most frequently passes into a chronic state; it may be accompanied by serous and phlegmonous chemosis,

\* Dublin Med. Press, Aug. 1847.



vascularity around the cornea, yellowish-white semilunar interlamellar effusions in the circumference of the cornea, extending more or less towards the pupil, ulcerations of the cornea, inflammation of the iris (very rarely); and in its chronic state—granulations, pannus, glandular blepharitis, pustules on the conjunctiva, spots on the cornea, staphyloma, &c.

It is frequently epidemic, and is then always contagious: in illustration of this Desmarres refers to epidemics, and to cases which have occurred under his own notice in Paris, and quotes Mr. Mackenzie's work, but there is no means, in the present state of science, of accounting for the disease being sometimes simple and non-contagious, and at other times epidemic and contagious.

15. *Treatment of Granulations of the Conjunctiva.*—The treatment of this obstinate affection, which is a frequent sequel both to catarrhal and purulent ophthalmia, Desmarres states, must vary according to the character of the granulations: resolvent ointments, red or white precipitate ointment, excision (when large), scarifications, excision followed by cauterization, and cauterization with nitrate of silver or sulphate of copper, are the remedies enumerated.

In all cases cauterization should be superficial: Desmarres has made for his own use a series of *caustic pencils of graduated strength*, applicable to the different degrees of acuteness or chronicity of these granulations. He remarked that the sulphate of copper is very useful so long as they are still vascular, but it is powerless when they become pale and nearly cartilaginous: that pure nitrate of silver is not attended with this inconvenience, but the reaction which follows its application is frequently too violent, and attended with serious accidents, several of which, both general and local, are enumerated. To avoid these two inconveniences, the inefficacy of the sulphate of copper and the too great energy of the nitrate of silver, Desmarres had these pencils prepared by mixing nitrate of potassa with the nitrate of silver, in the proportions of a half, a quarter, and an eighth of the caustic ingredient; these pencils are hard, firm, smooth, and little alterable by exposure to the air. This writer dwells most especially on the proper methodical application of caustics to the eye, having especial regard, when applied to suppress granulations, to the state of inflammation of the neighbouring structures, and to the redness, volume, and density of the granulations; when they are full, hard, and nearly cartilaginous, excision is impossible, and the sulphate of copper nearly useless; to destroy their vitality is the indication, and careful cauterization with the pure nitrate will effect the object, and produce no ill consequence, if any excess of caustic be washed away with a little dilute hydrochloric acid. A day or two afterwards, if the granulations are not sufficiently irritated (red), the cauterization may be repeated. On the fall of the eschar thus produced they will be found vascular, bleeding, and smaller, when the sulphate of copper may be used about every second day. By degrees the redness disappears, and they resume the pale yellowish colour they had at first. At this time the diluted nitrate will be found of the greatest service, measuring and appropriating the strength of the pencil to the degree of paleness of the granulations—experience will soon teach which pencil in the series should be preferred. In this manner, without any risk to the structures, a degree of vascular activity can be kept up sufficient to make the granulations disappear. Desmarres has employed this method for three years in numerous cases, and has never had to regret an accident.

We have no space to enter into the various practical details on the other varieties of inflammation of this membrane. The *Miasmatic conjunctivitis* is described as being produced by gases emanating from animal and vegetable matter in a state of putrefaction, of which instances present themselves in nightmen, scavengers, &c. In accordance with the author's general views, the varieties of *Exanthematic conjunctivitis* have nothing special, except the causes by which they are produced; and the treatment of every species of granular conjunctivitis is founded upon one general basis, with but very few modifications for the different species and varieties of the disease. All the varieties of *Purulent conjunctivitis* are contagious in the highest degree, and the history of one of these varieties is that of the others, apart from some difference in the rapidity of succession of the phenomena. Desmarres considers the purulent ophthalmia as a disease totally distinct from the granular, or catarrhal, and not, as believed by many, the same affection, differing only in degree.

§ VI.—*Diseases of the Cornea.*

This chapter in the work before us comprises articles on—1 and 2. *Corneitis* and its sequelæ; 3. *Perforations*; 4. *Incisions* of the cornea; 5. *Foreign Bodies* in the Cornea; 6. *Pricks*; 7. *Contusions* and *Ruptures*; 8. *Burns*; 9. *Fistulæ*; 10. *Softening*; 11. *Gangrene*; 12. *Spots*; 13. *Ossification*; 14. *Opaque Staphyloma*; 15. *Conical Transparent Staphyloma* of the Cornea; 16. *Keratocèle*; 17. *Vegetations*. Of 1634 patients treated by Desmarres, 636 had affections of the cornea.

16. *Congenital Opacity of the Cornea*.—The following case, described by Dr. Tavignot, has been published in several of the journals.

In a child aged ten months\* the eyes were in the following condition. The eyeballs were of a natural size, their form being, however, more regularly spherical than usual, and both being agitated by that sort of lateral movement called nystagmus. In all its extent, with the exception of a transparent zone, one line in breadth, at its circumference, the left cornea was completely opaque; on the right side the opacity was limited to the very centre of the membrane, one-third of which only was impervious to light. No traces of morbid vascularity could be detected, the lids being natural, and showing no marks whatever of previous ophthalmia. The iris, in each eye, had almost completely disappeared, being reduced to a small grayish line, in contact with the ciliary ligament. The pupil appeared to be perfectly insensible to the influence of light; vision existed on both sides, but too strong a light caused photophobia, and produced sneezing. The infant was born in this condition, and had never since birth suffered from ophthalmia. Examining the case in an etiological point of view, Dr. Tavignot remarked that the alterations might be referred either to an arrest of development, in consequence of which the cornea preserved in a permanent manner the temporary opacity existing provisionally during the first months of intra-uterine life, or more probably, to inflammation attacking the cornea during gestation. (Vide Half-yearly Abstract, Vol. II. p. 92.)

17. *Corneitis*.—Inflammations of the cornea are either superficial, interstitial, or deep; partial, or general; they are either primary or secondary.

*Primary or Idiopathic corneitis* is either diffuse or punctiform; the first is generally of very long duration, although exceptionally rapid; it is a serious disease, resolved with difficulty, and most frequently terminates in specks, the matter effused becoming organized between the laminæ; it frequently leads to amaurosis, and induces adhesions between the iris and capsule, and occasionally staphyloma. In severe cases Desmarres prescribes local bleeding and calomel, and subsequently (quoting Mackenzie's practice) sulphate of quinine; and in the after stages blisters, about the size of a franc, applied successively around the orbit, and a very weak solution of borax applied tepid as a collyrium.

Desmarres' description of *Punctiform corneitis* is so novel that we have given it in a condensed form as a separate article in our extracts. (Art. 56, p. 84.)

*Secondary corneitis* is always a consequence of external, and rarely complicated with internal ophthalmia, a character which distinguishes it from primary corneitis. There are two distinct forms, which in some cases occur together. Desmarres gives the following table of these forms and their varieties:

Secondary corneitis.	1. Vascular	Superficial	Partial and	Acute and
		Deep-seated	General	Chronic
	2. Non-vascular or Suppurative and Ulcerative	Superficial	Partial and	Acute and
		Interstitial	General	Chronic
		Deep-seated	Partial and	Acute and
			General	Chronic

Vascular corneitis is where vessels appear on the cornea: suppurative corneitis, otherwise abscess of the cornea, is where one or more effusions of lymph or pus form between its laminæ; but it can be easily understood that vascularity of the

\* Med. Times, July 24; from a Report of the Acad. of Sciences.

cornea may terminate in effusion between the laminæ, and that an abscess forming in the course of an external ophthalmia may exhibit vessels proceeding from the circumference. Desmarres describes all the above varieties very minutely, with the circumstances under which they occur. Superficial vascular corneitis is frequently the consequence of pustular conjunctivitis, and, when general, may terminate in inter-lamellar effusion, or in a pustule. It has been called panniform by some authors. It occasionally terminates in a kind of pannus, and very frequently in ulcerations of the cornea, with all their consequences. Mr. Jones makes the scrofulous ophthalmia essentially a species of corneitis.\*

Desmarres states that when corneitis first declares itself we can arrest the inflammation at once by the employment of a collyrium of nitrate of silver; but, to succeed, the collyrium must contain, at least, a twentieth part of the salt, the instillations must be repeated every half hour during, at least, one day, and when the remedy has been commenced its application must not be interrupted until the intolerance of light has disappeared. Desmarres recites the difficulties which attend this practice. The pain is compared by the patient to the introduction of fire, and sometimes becomes insupportable; and a pause should be made before the cure is attempted in this way in nervous individuals. After a very short time the solution requires to be applied only four or five times a day; and the author has remarked that from its use the conjunctiva has sometimes presented a peculiar kind of relaxation very difficult to remove by the use of excitants.

Deep-seated vascular corneitis is always a consequence of chronic ophthalmia, and attacks individuals of a certain age only. It is the result of a kind of disorganization of most of the membranes of the eye, and complicates the most serious affections of the globe, complete blindness being its invariable consequence.

18. *Use of Belladonna in Perforating Ulcerations of the Circumference of the Cornea.*—In the course of catarrhal and purulent inflammations interlamellar effusions take place in the cornea, sometimes very large, slanting outwards, sometimes progressing inwards, and gradually destroying the deep lamina of the cornea. The question arises, should the pupil be dilated? If the ulcer is so large that a prolapse of the whole margin of the iris is to be feared, Desmarres says, yes;† if the ulcer is limited and threatens only a very small part of the subjacent iris, no. By dilating the pupil in the first case, it is evident that the whole of that part of the pupil situated opposite to the ulceration will be saved; while in the second case, on the contrary, the projecting part of the iris seems to close the opening without risk to vision.

In perforating ulceration of the centre of the cornea, with recent hernia of the iris:—Having shown that when the case is seen in time this occurrence which threatens to compromise or destroy vision ought to be prevented, Desmarres asks the question, ought we to despair of reducing it? and answers by stating that his experience, on the contrary, has demonstrated that in most cases, not only may a reduction of a part of the iris be produced, but also the complete re-establishment of the pupil, without any ulterior damage to vision. For which purpose recourse must be had, before gangrene of the iris from compression occurs, to the following treatment:

Keep the patient on his back, with his head low, and as quiet as possible; apply light compresses to the eye steeped in the following liquid, changing them every five minutes, and at each application instil a drop of the same liquid between the eyelids, with the greatest precaution not to press upon the globe of the eye: R.—Distilled water, two pints; the herbs belladonna and hyoscyamus, of each two ounces; infuse and add six drachms of extract of belladonna freed from fecula; filter and keep cold with ice. The cold application diminishes the flow of blood in the capillaries of the whole organ, and prevents the gangrene of the projected portion of iris by preventing the inflammatory distension; while the belladonna diminishes the hyperemia of the iris, and tends to disengage it from the position into which the flow of the aqueous humour through the ulcerating cornea has brought it.

Desmarres was led to the application of this powerful iced preparation of belladonna in this and other ophthalmic cases, by considering the fact that these ulcer-

\* Lib. cit., p. 174.

† Lib. cit., p. 305.



ations are accompanied with a violent hyperemia, the iris being strongly injected, and the pupil almost immovable; that the ordinary mode of applying belladonna, particularly in inexperienced hands, has frequently no effect; that when the eye is healthy the iris is very easily narcotized by repeating the application, even at distant intervals; but that when the membranes, and particularly the cornea, are inflamed, this is effected with much greater difficulty. Desmarres repudiates every attempt, either in old or recent cases of proceridia, to reduce the hernia with stilets and analogous instruments; in his experience these have always increased the inflammation, and have never done any good.

When a hernia, although small, has actually taken place at the circumference, if the iris is found gradually protruding, so as to threaten the pupil, the latter should be dilated, and methodical compression resorted to.\*

19. *The Curability of Opacities of the Cornea.*—A discussion appears to have arisen on this subject. Dr. Jacob has stated that however dense opacities may be, they will be obliterated in time "unless they are cicatrices." This is admitted also in Mr. Wharton Jones's book; but Dr. Howard, of Montreal, has published several cases to prove the curability of opacities—including cicatrices, under the designation of "opacities of the cornea."† Dr. Jacob does not deny that many cicatrices even may be diminished in extent, without any application whatever. The treatment employed by Dr. Howard consists in fumigations every day, for ten minutes, with hydrocyanic acid, and after the lapse of another ten minutes dropping into the eye a solution of nitrate of silver, ten grains to the ounce, or Janin's ointment (Bol. armen., tutiæ ppt. āā ʒij; hydr. præcip. alb. ʒj; axunge ʒi), and the application every ten days of solid nitrate of silver. It appears to be generally admitted, as stated by Mr. Jones, that where the opacity depends upon interstitial deposition, it tends, ultimately, to disappear, and needs no special remedy, although general tonics and local stimulants may frequently hasten this end; but where opacity is the consequence of a slough or ulceration, it will most assuredly remain opaque, although there may be a great deal of opacity surrounding a cicatrix, which may be made to disappear by remedies of the kind mentioned.

Desmarres has obtained no benefit from the use of hydrocyanic acid, either in superficial opacities of the cornea, or in photophobia.‡ He believes that all the pretended specifics for the cure of opacities act in the same manner, by continually exciting the vitality of the eye, and that an equally good effect may be obtained by stimulating the eye daily with a feather passed over the conjunctiva. In the treatment of albugo and leucoma, Desmarres mentions *scarifications*, having seen many instances of opacity in which punctures and incisions in the centre of the opacity have induced a well-marked transparency at its circumference. They are applicable to central leucomatous spots surrounded with recent inter-lamellar effusions; and their efficacy may be most depended upon if bleeding should follow each puncture—a circumstance which indicates that the spot is not an inert product, and is accordingly susceptible of absorption. The *seton*, according to Desmarres, is abandoned, on account of its difficulty, the pain it induces, and its liability to occasion purulent deposits. *The excision of a portion of the cornea and its reunion by suture* is a measure adopted by Dieffenbach, but, according to Desmarres, not entitled to imitation, and *abrasion* is a remedy which ought to be tried only after every other has failed, on eyes which are completely blinded, and wherein an artificial pupil cannot be made; this operation is extremely perilous, although it would appear to have succeeded in some hands.

20. *Keratoplasty*—In our second volume we gave an account of the operation of *transplantation of the cornea*.§ Desmarres states that its success is by no means certain. Unfortunately, after transplantation, the new cornea has in every instance remained more or less opaque, and it may even become reabsorbed.|| It can be applicable only in the most desperate cases. Under this head Desmarres refers to a curious fact, frequently observed after amputation of an opaque staphyloma of the cornea, viz., an elongation of the scanty shred towards the circumference of the cornea, or, perhaps, even a partial reproduction of this membrane.¶

\* Lib. cit., p. 307.

† Lib. cit., p. 331.

‡ Desmarres, p. 333.

† Dublin Med. Press, April 22, 1847.

§ Half-yearly Abstract, Vol. II. p. 235.

¶ Gazette des Hôpitaux, 19 Oct., 1843.

Finally, and in reference to the above recitations from Dr. Jacob and Dr. Howard, we may state that Desmarres concludes his article on this subject by remarking, that in the most extreme cases, resulting from abscesses and ulcers, the surgeon should not be in a hurry to recur to the desperate remedies spoken of, particularly to abrasion and keratoplasty. It should not be forgotten that the resorption of spots on the cornea takes place very slowly, requiring not only days, nor even months, but, as Fabini has said with justice, "*Notandum tamen, in optatissimo quoque casu, pellicidatum corneae lente et fere insensibiliter tantum restitui, ita ut quomodoque non per menses, sed per annos, curatio duret.*"

M. Perez de la Flor mentions *acupuncture* as having produced excellent effects in opacities of the cornea.

The patient being placed as for the operation of cataract, and the eye being fixed, an acupunctuation needle is held in the same manner as a writing pen, and introduced at a very acute angle, of two or four degrees, at each of the extremities of the vertical and transverse diameters of the cornea, half a line from the junction of this membrane with the sclerotica. It is made to penetrate sometimes to the second of its constituent lamina, sometimes to the membrane of the aqueous humour. The needle is always allowed to remain for a period varying from two to five minutes. After having withdrawn it, inflammatory reaction has to be treated according to its degree. The end of the needle is sometimes moistened with prussic acid, twelve drops to a drachm of distilled water.\*

21. *Operation for the radical Cure of Opaque Staphyloma of the Cornea.*—Desmarres' operation is this:—The patient's eye is fixed in the same way as for Scarpa's operation. An ordinary cataract-needle with a fine blade, a strong pair of forceps, the branches of which meet by pressure a considerable length, and a pair of straight scissors, are the only instruments necessary. A small puncture is made with the needle at the most dependent part of the staphyloma, through which the aqueous humour soon exudes, and the tumour collapses in every direction: it is immediately seized with the forceps, held vertically with the left hand, the point of the forceps upwards, and separated with one cut of the scissors, the point directed downwards. Care is necessary, not to drag upon the globe of the eye, so as to excite muscular contraction. This proceeding, applicable to complete spherical or conical staphyloma, is less painful than those usually resorted to, and consequently the accidents which the pain is apt to induce, as, for instance, convulsions, are less likely to take place.

22. *Fungous Growth produced by a Wound of the Cornea.*—A case is described by Dr. G. Scotti, of Pavia: the cornea was softened by the blow, and grew into a fungous excrescence, flattened by the habitual pressure of the eyelid upon it: the affection was cured in four or five days, by touching the growth with solid nitrate of silver, and applying belladonna stupes to the eye.†

### § VII.—Diseases of the Sclerotica.

After describing the black spots occasionally observed in this membrane, and its state of attenuation produced by various circumstances, Professor Desmarres describes the varieties of—

23. *Staphyloma of the Sclerotica.*—This affection may involve both the sclerotica and the choroid membrane, and may be produced by any disease of the eye which tends to weaken the tissue of the sclerotic coat. Its treatment varies according to the exciting cause. If the tumour be small, and consecutive to a partial atrophy of the membrane, the cause of the disease no longer existing, a complete cure may be expected by touching the staphyloma regularly once or twice a week with a pencil of nitrate of silver. If the cauterization prove ineffectual, the small tumour may be punctured every eight or ten days, applying to the eye, immediately after each operation, slight methodical compression. If the tumour be of a large size, and confine the motions of the eyelids, paracentesis of the eye may be performed, and the operation repeated: when these measures fail, the tumour must be completely removed by the operation recommended for the opaque staphyloma of the cornea.

\* Gaz. Méd., May 25, p. 423, from *El Regenerador*.

† Wilde's Report; the Dublin Journal, Feb. 1847.

24. *Scleritis (Rheumatic Ophthalmia of Authors).*—A short abstract of Desmarres' account of this disease will still further serve to explain to our readers his doctrines in reference to the connection which subsists between affections of the eye and certain constitutional diseases. Desmarres remarks that there is no case of acute conjunctivitis, corneitis, iritis, choroiditis, or retinitis, without a complication of scleritis, which circumstance may be understood by bearing in mind the vascular connection which exists between all the membranes of the eye, and particularly between the cornea, scleritica and iris. It is, however, certain, that the sclerotic injection is almost always secondary to a more violent inflammatory state of some of the membranes. A true and simple inflammation of the sclerotic coat is a rare occurrence, still it certainly may exist, and Desmarres has witnessed cases. Thus, we have partial or general, acute or chronic, but very rarely primary, scleritis, and the affection is generally secondary to inflammation of some of the most important structures of the eye. *Anatomical symptoms*—In acute scleritis, the redness assumes a particular form, that of a circle, of variable breadth, surrounding the cornea; when the circle is complete, the scleritis is general; when incomplete, partial. Beyond this circle it is scarcely rose-coloured; most frequently, absolutely white. The vessels composing the vascularity are very fine, parallel, larger at their corneal than at their other extremity, and about four or five millimetres long; the tint varies from the palest rose to the brightest carmine. The large ends of the vessels almost rest on the cornea, and terminate abruptly; the opposite extremities seem to lose themselves in the scleritica; these vessels are deep-seated, and do not anastomose, and have been compared to the disc of a radiated flower. They cannot be confounded with the vessels of the conjunctiva, which are sinuous in their course, very long, anastomose together, having their bases turned to the folds of the conjunctiva, and their summits crossing the direction of the vessels of the scleritica, and seated superficially. The latter are also moved with the membrane, as when traction is exercised on the inferior eyelid; whereas the sclerotic vessels always remain immobile. For the most part, as already stated, this condition of the scleritica occurs as an epiphenomenon in other affections of the eyes. *Physiological symptoms.*—The most marked is intolerance of light, attributable, according to Desmarres, to a concomitant irritation of the retina. Pain is generally very violent, and corresponds with the degree of injection. The motions of the eye become difficult, and the organ appears to the patient to be increased in size. Pains frequently radiate from the bottom to the front of the orbit, towards the orbit and the whole side of the face; they are frequently increased as evening advances, and in the night. Vision is generally modified; it is best in a dull light, but, on account of the insurmountable difficulty in opening the eye, it frequently cannot be exercised at all. This difficulty occurs especially in infants and young scrofulous persons. The spasm and lachrymation which occur, have been referred to the extension of the inflammation to the ciliary body. In the chronic affection, the same symptoms exist in a minor degree. *Termination.*—Scleritis generally terminates in resolution, sometimes it becomes chronic, and it occasionally leads to amblyopia or staphyloma. *Etiology.*—In scrofulous subjects, when the scleritica becomes inflamed consecutively to other inflammations of the eye, it generally remains so much longer than in other persons, and relapses are very frequent. In rheumatic subjects, this same membrane appears also to become the seat sometimes of a very obstinate inflammation. This is the circumstance, according to Desmarres, which has led certain practitioners to admit a rheumatic ophthalmia, easily distinguished, according to them, from idiopathic inflammation, but which, in reality, does not present *one distinctive anatomical character*.

In the article "Corneitis," Desmarres shows that the phlyctenæ which occur in the cornea, in what has been termed rheumatic corneitis, has no value whatever as a distinctive character, and he here states that it is the same with the arrangement of the vessels in scleritis—that is to say, as far as the rheumatism is concerned, there is nothing specific in it. The conjunctiva inflames under the influence of cold; the scleritica is subject to the same laws. Dr. Desmarres cannot comprehend why, in the latter case, we should refer to a particular principle which does not exist in the former, and he quotes Mr. Mackenzie, who has described the disease under the term "rheumatic ophthalmia," as having been aware of the



"vicious" character of this denomination. Mr. Mackenzie says—"If I am asked what I mean by rheumatic ophthalmia, I answer: 1. I intend simply to express an inflammation of the fibrous membrane of the eye, the sclerotica, and of similar structures, recognizing the influence of cold as a cause. 2. I do not believe that this ophthalmia is an inflammation differing in *nature* from common inflammation, having its source in what is called the rheumatic constitution or diathesis. 3. The rheumatic ophthalmia occurs frequently in individuals who have never had rheumatism in any other parts of the body. 4. I have adopted the expression *rheumatic ophthalmia*, but perhaps it would have been more exact to say *idiopathic scleritis*." By this passage, Desmarres remarks, we may see that the rheumatic ophthalmia of authors is neither more nor less than ordinary inflammation of the sclerotica, and yet a new-born infant cannot have an injected sclerotica but it is referred by accomplished practitioners to rheumatism; and in treating of iritis, and of the serous membranes of the eye, Desmarres urges that the same preconceived ideas have opened a false route to those who have adopted them.

A friend of our own was operated upon for cataract by depression; he had an attack of well-marked scleritis in an aggravated degree; in accordance with generally received doctrines, this was called a "rheumatic ophthalmia," and yet this individual was upwards of fifty years old, and had never known what it was to feel a rheumatic pain.

The *treatment* of acute scleritis, Desmarres states, is essentially antiphlogistic, and, without offering anything new, he admits the propriety of the ordinary remedies, except that he remarks, respecting the use of collyria, that they are far from being attended with the bad results which some authors attribute to them in this disease. When the inflammation is associated with an incipient internal ophthalmia, as iritis, capsulitis, or choroiditis, all collyria are doubtless contraindicated, that of belladonna excepted; but when the inflammation is external, they frequently moderate all the symptoms in a very short time. The nitrate of silver especially, strong and frequently instilled into the eye, is of the greatest use; and when the inflammation begins to subside, weak solutions of rhubarb and tannin may be employed, particularly if, in winter, they are used slightly warmed. The nitrate of potassa may be employed in the same manner.

As well calculated to show the unsettled state of ophthalmic pathology, we may here state to our readers that Dr. Jacob, admitting to the full extent a rheumatic ophthalmia, condemns ophthalmic writers, for the assumption that it has its seat more especially in the sclerotic coat, and states his conviction that this coat is no more the seat of the disease than the other portions of the eye, and that this notion has had the injurious effect of diverting the practitioner's attention from the more important consideration that the whole of the organ is engaged, and the parts essential to vision are in danger.\* He also admits that the diagnostic signs of the disease may be entirely absent in some cases, and may exist in others totally independent of the rheumatic diathesis.

Turning to Mr. Jones's Manual we find eight paragraphs devoted to the description of rheumatic ophthalmia; then in a foot-note we have the synonyms "rheumatic scleritis" and "idiopathic scleritis;" then it is stated that the subjects of the disease are always adults, and admitted that they may never have suffered from rheumatism in any other part of the body; and, finally, a description of the complication "catarrho-rheumatic ophthalmia."†

Dr. Jacob's views are far more consistent with those of Desmarres, and, as we think, with the common-sense view of the case; he denies that the disease is properly called rheumatic in individuals who have never suffered from rheumatism; it may, perhaps, occasionally occur, but not frequently, without inflammation of the joints or other organs, but not without constitutional rheumatic disease; if that be not present the local inflammation is destitute of the specific character.‡

#### § VIII.—Diseases of the Anterior Chamber.

The affections of this part of the eye, according to Desmarres, are *hypopyon*, *hypohemia*, or effusion of blood, and *decemetitis*, or inflammation of the membrane of the aqueous humour.

\* Dublin Med. Press, 1846, p. 193

† Lib. cit., p. 121.

‡ Lib. cit., p. 196.

25 *Hypopyon*.—Paracentesis of the cornea for this affection, as recommended in severe cases by Tyrrel, Mackenzie, and Jones,\* is condemned by Desmarres, who regards the operation as at once useless and dangerous.†

26. *Decemetitis*.—Jones, and most other writers, state that flakes of lymph occur in the aqueous humour when its membrane is inflamed; Desmarres has never been able to find such flakes, even when the aqueous humour has appeared to be turbid; on resorting to paracentesis for the relief of the patient, it has always proved to be transparent. Desmarres denies the fact, but not the appearance presented; for, like other observers, he has seen lymph, and even pus, deposited, but always in the most dependent part, the other parts of the chamber remaining perfectly transparent. The treatment recommended by Desmarres is the same as in primary corneitis, or iritis in the first degree, and he states that paracentesis of the eye, which was advocated by Wardrop, is here very useful in acute cases. It may be resorted to even when the cornea is greatly affected; patients have always been relieved immediately by the puncture of this membrane, and the inflammation has never been aggravated, as represented by Middlemore.

27. *Deficiency of the Aqueous Humour*.—M. P. Bouisson, professor of clinical surgery at Montpellier, has published a memoir on the deficiency of the aqueous humour which occurs after the operation for cataract, and in some other cases;‡ and since we find no mention of this as a pathological condition of the anterior chamber, either by Desmarres or Jones, we give a full abstract of the paper. According to M. Bouisson, it is one of the accidental results of the operation for cataract, and has been very little attended to. When the aqueous humour is abundant it separates the iris from the cornea, augmenting the tension and the convexity of the latter, and reducing its thickness; it contributes also to the enlargement of the posterior chamber, by slightly depressing the lens, but the latter action is much less marked than the former, in consequence of the resistance which the vitreous body opposes to the retropulsion of the lens. When the aqueous humour is in small quantity, the iris approaches the anterior crystalloid and the concave surface of the cornea, which circumstance influences the refraction of the rays of light, and allows plastic inflammations to organize permanent relations between the iris and the cornea, or the anterior crystalloid.

Every direct wound of the cornea is liable to result in the evacuation of the aqueous humour, but it is reproduced in a very short time; even if the wound does not cicatrize, and the liquid continually flows out, its reproduction is not the less rapid, as seen in fistula of the cornea. The operation for cataract is one of those causes which most frequently leads to the loss of the secretory function of the aqueous humour. Many authors appear to have noticed this fact, but not to have specially attended to it. A case by M. Mannoïr is quoted by M. Bouisson, in which, after an operation, the aqueous humour flowed through an opening in the cornea, and enfeebled vision; the reproduction of the liquid was not sufficiently rapid to act on the cornea and re-establish its natural convexity; and from the manner in which M. Mannoïr expresses himself, it is manifest that he has made the same observation under divers circumstances. Much more simple lesions of the cornea are sometimes followed by the same effect. M. Bouisson has seen it after an accidental wound, whether a fistula was formed in this way, diminishing the secretion of the aqueous humour, or whether the iris adhered on a level with the wound of the cornea, the aqueous humour being insufficient to force this membranous diaphragm, and overcome the feeble resistance of the soft adhesions formed during cicatrization. The want of reproduction of this liquid, far from being always the consequence of the adhesion of the iris, may precede this, which requires a certain time to form. The same circumstance may occur in the operations for artificial pupil, and in wounds made for the extraction of foreign bodies, and punctures for the evacuation of sanguineous and purulent effusions.

The morbid disposition which tends to diminish or to prevent the reproduction of the aqueous humour, is set up under divers influences which manifestly alter the nutrition of the eye. In man the abuse of diet, privations, or too debilitating a regimen, produce effects on the eye analogous to those produced on the eyes of

\* Lib. cit., p. 197.

† Lib. cit., p. 367.

‡ Archives Générales, May 1847.

animals by Majendie's experiments. A flattening and withering of the cornea, in consequence of loss of the aqueous humour, has been observed after the abundant evacuations in Asiatic cholera. The same effects seem sometimes to follow the lengthened use of belladonna and mercurial frictions employed for the cure of inflammations.

After operations for cataract inflammations frequently set in, during the progress of which the aqueous humour is sometimes increased and sometimes diminished; the first is the most common case. Examples have been given of so great an accumulation that a rupture of the cornea became inevitable; but in other cases the membrane of Descemet is affected in an opposite manner, and there is an arrest of exhalation. This last result occurs especially in patients subjected to the operation who present the morbid condition of the system which has been referred to. M. Bouisson gives the details of two cases in illustration. He remarks that, in some subjects after the operation for cataract, the morbid diminution of the aqueous humour may become permanent, and contribute to the loss or permanent weakness of the sight. *Signs.*—The most prominent are—1st, a flattening of the cornea; 2dly, a withering of the cornea, a consequence of the flattening; 3dly, opacity of the periphery of the cornea; 4thly, a change of form of the anterior chamber. After the loss of the aqueous humour the iris is generally pushed forwards by the crystalline and vitreous humours against the under surface of the cornea, so as to efface the anterior chamber. When a certain quantity of the humour still remains in the chambers, it occupies the most dependent part, and here it separates the iris from the cornea more than at the upper part. The diaphragm formed by the iris, instead of being perpendicular to the antero-posterior axis of the eye, is inclined from above downwards, and from before backwards. The most elevated part of the chamber contains only a humid vapour, which slightly tarnishes the cornea, and the aqueous humour is disposed like the fluid in hypopyon. This is best observed in the lateral examination of the eye. 5thly, *Oscillations of the iris.*—This remarkable symptom of defect of the aqueous humour is observed in a very marked degree in many patients. It is very frequent after the flow of a large quantity of the vitreous humour, or when the state called *synchisis* exists—a disease, M. Bouisson states, in which the hyaloid cells are destroyed by a kind of dissolution, and can no longer retain the vitreous humour. The same thing occurs when the aqueous humour is partly evacuated, and no longer furnishes to the anterior plane of the iris the support which is as necessary as that which it receives from the vitreous humour. The defect of this humour favours oscillation so much the more readily, as the small quantity of liquid which remains in the chambers acts easily on the iris, by passing from one chamber to the other through the pupil. 6thly, *Atony of the eye and its dependencies.*—We may judge of the existence of this languor in the nutritive functions of the eye by the non-regeneration of the aqueous humour, or by the slowness with which nature repairs the loss of this fluid. The discoloration of the conjunctiva and of the free borders of the eyelids, the paleness of the caruncula lachrymalis, that of the face even, and the leaden tint of the inferior eyelid, are the sensible witnesses of this kind of local anæmia, the existence of which frequently coincides with general debility of the constitution, produced by blood-letting or mercurials, by diet insufficient in quantity, or deficient in quality, or by other hyposthenic influences. 7thly, *Presbyopia.*—This disturbance of vision results from the changes effected in the eye by the defect of the aqueous humour. There is a shortening of the antero-posterior diameter of the eye, a change in the form of the cornea, frequently a trembling of the iris, and, after the operation for cataract, an absence of the lens. M. Bouisson describes minutely the effect which these changes must have upon vision, and various pathological phenomena which, he states, have been hitherto ill-understood.

*Treatment.*—The treatment of the disease must be determined by the nature of its cause. When it has resulted from an accidental discharge from a wound, the repose of the organ, the abstraction of light, and all the ordinary precautions calculated to favour cicatrization will suffice for its prompt reproduction. If it has succeeded an ulceration of the cornea, the specific cause of the ulceration must be treated, and at the same time endeavours must be made to promote the cicatrization of the cornea by cauterizing with nitrate of silver, or sulphate of copper.



Lastly, if the defect of aqueous humour occurs spontaneously, or succeeds an operation, particularly that of cataract, the general and local disposition by which it has been influenced must be determined. This predisposition being of an asthenic character, the indication of supporting the powers of the organism and stimulating the ocular apparatus, is thus established. This indication may be fulfilled in various ways. Collyria, containing sulphate of zinc, wine of opium, and rose-water, are very useful. Professor Rosas, of Vienna, has employed the following collyrium: 50 centigrammes of sal ammoniac, or alum, 20 drops of alcohol, and 120 grammes of distilled water. Tonic fomentations, such as infusions of sage or camomile, used ad libitum, and kept on the eye with compresses, may be useful. Similar advantages may result from spirituous fomentations, as of eau de Cologne, &c., and the use of aromatic scent-bags, containing rosemary, thyme, &c., since the patient will frequently apply them for a long time without inconvenience. To these means may be added blisters to the temples, or over the eyebrows, which should be frequently renewed, particularly if they produce greater tension in the eye, which is a sign of the reproduction of the aqueous humour. To these local means may be added galvanism to the periorbital tissues, and such remedies as are calculated to raise the vital powers of the system; ferruginous preparations, quinine, gentian, and other bitters. M. Bouisson suggests that instillation of water between the eyelids, as suggested by M. Mannoïr, may be useful when the cornea is intact; since it is possible that keeping the eye moist may oppose the exosmosis of the aqueous humour through the cornea, and accordingly favour the reappearance of the membrane of Decemet within its cavity.

28. *Paracentesis of the Eye.*—As we have referred to this operation more than once, which Mr Jones very carefully describes, but is not very favourable to,\* we may here state that Desmarres believes it has been too much neglected, and that it demands most serious attention. It has been employed in general for the evacuation of blood and pus in the anterior chamber; it has been recommended for the purpose of depressing opaque or pellucid staphylomata, and to diminish the volume of the eye in hydrophthalmia; it has been advised also in inflammations of the membrane of the aqueous humour. Dr. Desmarres does not contest its utility in most of these cases, but he believes that this little operation may be of the greatest possible service under other most important circumstances.† Paracentesis is done in two ways: 1st. An ordinary cataract-needle, or the point of a keratotomy, is placed on the external circumference of the cornea, and pushed into the anterior chamber; a little rotatory motion of the instrument on its axis separates the lips of the wound, and the aqueous humour escapes. This is the operation described, with some modification, by Mr. Jones. 2dly. Beer's lance-shaped knife, or a particular trocar, or simply an ordinary lancet, is plunged into the sclerotica, a little below the transverse diameter of the globe, and in such a manner that one of the cutting edges of the instrument is placed forwards and the other backwards. The wound made in the direction of the fibres of the external rectus muscle presents its anterior angle two or three millimetres from the cornea. Desmarres has thus employed paracentesis: 1. In internal inflammations of the eye, after operations for depressing the cataract, or after dilaceration of the capsule. In one case of violent inflammation of the eye, with hypopyon, active antiphlogistic treatment was adopted without much effect. On the tenth day the eye was punctured by the sclerotica; a great quantity of aqueous humour flowed out, and the patient in half an hour was greatly relieved. From this moment all the inflammatory symptoms disappeared, and the hypopyon was promptly absorbed. In another case there was complete amaurosis eighteen years after the depression of a cataract in the right eye, a lenticular cataract in the left eye, adherent to the iris throughout, except below and outwards; the iris was discoloured in both eyes. Dilaceration of the capsule was performed in the left eye. Eighteen days after which violent internal ophthalmia set in; paracentesis by the sclerotica was performed, and the aqueous humour evacuated; the inflammation immediately subsided, no further serious accident resulted, and the lens was completely absorbed. In a third case there was old double amblyopia, the consequence of chronic in-

\* Lib. cit., pp. 44, 97.

† P. 773.

flammation of the internal membrane. A lenticular cataract developed itself, and became complete in three days. Dilaceration of the capsule was performed. On the eighth day the patient was seized with violent pain, the eye was red and weeping, and the sclerotica was injected; the pains had only set in two hours. Paracentesis was performed, and the aqueous humour evacuated: the relief was instantaneous, and continued for three days; but after this the inflammation returned, and a second operation was performed; from which time the absorption of the lens went on regularly, and the patient was rapidly cured.

Desmarres resorts to the operation for the purpose of preventing hernia of the iris, staphyloma, and ulceration of the cornea, and in acute retinitis and congestive amaurosis.

### § IX.—*Diseases of the Iris.*

The articles in Desmarres' work under this head are—1. *Coloboma*; 2. *Multiplicated Pupil*; 3. *Accidental or Spontaneous Separation of the Iris*; 4. *Absence of the Iris*; 5. *Congenital Spots and Accidental Tints of the Iris*; 6. *Anomalous Vessels in the Iris*; 7. *Trembling or Oscillation of the Iris*; 8. *Punctures*; 9. *Incisions*; 10. *Ruptures*; 11. *Contusions of the Iris*; 12. *Foreign Bodies in the Iris*; 13. *Hernia of the Iris through the Cornea*; 14. *Adhesions or Synechia of the Iris*; 15. *Obliteration or Atresia of the Pupil*; 16. *Staphyloma of the Iris*; 17. *Mydriasis*; 18. *Myosis*; 19. *Tumours of the Iris*; 20. *Iritis*; 21. *Operation for Artificial Pupil*. In Mr. Jones's Manual these affections of the iris are greatly scattered. We find iritis in the second section of the chapter on ophthalmic inflammation; iritis, again, including scrofulous iritis, rheumatic iritis, &c., constituting a genus of the second order of the third section of the same chapter; operations for artificial pupil constituting the third section of the third chapter; myosis and mydriasis in the fourth chapter; injuries of the iris in the eleventh chapter, &c. &c.

29. *Iritis*.—Desmarres admits a primary and secondary, an acute and chronic, a partial and general iritis: the inflammation may be confined to the external surface, and is then a partial inflammation of the membrane of the aqueous humour: to its posterior surface, constituting uveitis; or it may extend sooner or later to the parenchyma, constituting parenchymatous iritis; but the species admitted by authors under the heads essential—rheumatic—gouty—scrofulous—scorbutic—syphilitic—pseudo-syphilitic—mercurial—traumatic iritis, &c., ought to be discarded.

This illustrates how completely the work before us tends to revolutionise the principles of ophthalmic medicine and surgery introduced and generally adopted in this country from the Germans. It is impossible for us to do justice to the author in support of his own principles. We can only convey to our readers a few of the more prominent points of his argument, which we have endeavoured to effect under several heads in this Report.

The specific causes of iritis, according to authors, are so numerous that the varieties of the disease are infinite, varieties which, notwithstanding the contrary doctrine taught by Beer and his disciples, cannot be recognised by their physical characters. In France, Desmarres states, the superannuated doctrines of Beer are no longer admitted. Who will now believe that in what is called rheumatic ophthalmia the pupil is perpendicularly oval—that it is transversally or perpendicularly oval in the pretended gouty ophthalmia—that it is oblique from below upwards, and from without inwards, in syphilitic ophthalmia—when the authors who have adopted these distinctions admit that the inflammation may be seated rather in one point of the iris than in the other? It is not to be denied that a general affection, of whatever nature, may modify an ophthalmia, but all must now deny that such affections are marked infallibly in the eye by appreciable physical characters. Even in syphilitic iritis, which more than any variety might appear to make an exception to these views, the symptoms are generally the same as those of iritis in general. Authors have said that in this variety a marked swelling of the inner circle of the iris, and a greenish tint resembling that which occurs in eruptions on the skin, are observable, with many other peculiarities; but all the characters of syphilitic iritis, without one exception, are met with in simple iritis, and in individuals who have never had syphilis—the peculiar colour of the inner

circle of the iris just referred to among the rest. What are called condylomata of the iris, although rarely, are still met with in the simple affection, which seems to destroy their value as an anatomical symptom characteristic of syphilitic iritis. The pains, increased at night, which are noted in syphilitic iritis, are precisely of the same character in simple iritis. Desmarres admits that all the signs of syphilitic iritis taken together may by chance lead to the assumption of a secondary or tertiary syphilis; but an attentive examination of the patient, the existence of indurated chancres, syphiloides, &c., can alone furnish conviction to the practitioner, and the same is true of all the other special varieties of iritis, with this difference, that the anatomical characters which have been given by authors as pathognomonic of these varieties, are much less marked, and have necessarily less value, and that the general examination of the patient is even more indispensable, and this is especially the case in the pretended rheumatic, arthritic, and scrofulous varieties of the disease.

30. *New Method of Reduction of Hernia of the Iris.*—This consists simply in cauterizing a spot, at a distance from the hernia, with nitrate of silver; it is based on the following data:—1. Hernia of the iris through the cornea does not become disorganized for some days. 2. The protruded iris, irritated by the contact of the tears or the air, or by the friction of the superior eyelid, or even of the edges of the ulcerated cornea in which it is imprisoned, has a tendency to swell, and the irritation and swelling prevent morification and *arrest cicatrization*. The progressive engagement of the iris is proved by observation: If a recent hernia be touched with an irritating body, it instantly acquires three times its original size; and if we watch the progress of cicatrization in the ulcer of the cornea, the hernia being unreduced, the pupil is found to diminish by degrees, and even to disappear. 3. Adhesions are established between the iris and the cornea before the iris is disorganized; for a few days these are very weak, and may be destroyed at once *by augmenting the vascular action of the parts which furnish them*, or by a new inflammation developing itself in another part of the eye. 4. The materials of adhesion are in the first instance furnished by the cornea; the cornea is in a morbid state at the point at which the healthy iris protrudes. 5. These materials are derived from the divided vessels of the ulcer, the origin or base of these vessels being at the circumference of the cornea. 6. By irritating the part in which the base of these vessels ramify, the secretion at the edges of the ulceration is augmented; in this way a fluid secretion may be induced around the hernia, which will destroy the imperfect adhesions, and give freedom to the iris in the ulcer, which latter is augmented in size by the secretion. 7. By putting the iris under the influence of belladonna before producing such an irritation mechanically, we obtain a power, placed behind the cornea, acting from before in a direction backwards, and capable of reducing the hernia.

After this beautiful chain of pathological reasoning, Desmarres states: A portion of the iris having projected through an ulcer of the cornea, and instillations of belladonna having been used for some days without any beneficial result, it may be inferred that the pupil has been rendered as large as possible by this agent, when the operator proceeds thus:

The upper eyelid being held by an assistant, and the lower eyelid depressed with the index-finger of the left hand, he applies with the right hand the point of a pencil of nitrate of silver to the conjunctiva of the bulb, close to the cornea, and cauterizes it in three or four points as energetically as possible, without penetrating the mucous membrane too deeply. A very active irritation of the vessels which feed the ulceration of the cornea is thus provoked, and the secretion necessary to set the iris free is the result. Sometimes, instead of points, a line of cauterization is made in the neighbourhood of the hernia, and in some instances, where the first cauterization has failed, after an interval of two or three days, a second, third, or fourth, even on the cornea, but taking the greatest care that the caustic does not extend to the iris, otherwise the hernia would at once be increased. In a rare instance success was not obtained until after the eighth application; but the reduction is generally effected after the first, second, or third. Desmarres has succeeded in so many instances by this method, that he has ceased to count the operations.\*

\* Lib. cit., p. 397.



§ X.—*Diseases of the Vitreous Humour.*

These are—1. *Hyalitis, or Inflammation*; and, 2. *Synchisis, or Softening* of the Vitreous Humour.\*

31. *Sparkling Synchisis.*—In addition to the ordinary or simple synchisis, Desmarres has given this name to a variety which presents very unusual symptoms—the appearance at the bottom of the eye of a multitude of brilliant spangles, shining like a diamond, and unaccompanied with any alteration of sight.

Desmarres presented to the Academy two patients thus singularly affected; both had been operated upon for cataract; minute sparks were seen, very numerous, and recurring incessantly, at the bottom of the orbit; they were most remarkable in one of the patients, appearing as if suspended at the bottom of the eye, and remaining visible for many seconds. In the other case, on the contrary, the sparks fell back behind the iris; when the eye was in motion they increased in number, and they then appeared in such quantity that the whole eye was bespangled with these microscopic luminaries. Dr. Desmarres refers the appearance to a softening of the vitreous humour, accompanied with minute scales of the hyaloid membrane remaining transparent, but being folded upon themselves, and reflecting instead of refracting the light.†

In a paper read before the Royal Academy of Sciences of Paris, on the 19th of July, M. Bouisson informed the Academy that, in some researches entered into by him on the composition of the vitreous humour, he had recognised the existence of a fatty matter, in such a state of minute division that the transparency of the humour was not in general affected by it; and if this result be taken in connection with the fact that crystals of cholesterine have been found in the posterior chamber of eyes which have for a long time been affected with blindness, we are naturally led to the conclusion, that in the normal condition of the eye, a certain quantity of fatty matter is contained in the vitreous humour. This M. Bouisson thinks may be separated in a crystalline form by some peculiar pathological influence, and may present that apparent mobility at the bottom of the eye which arrests our attention in those cases.‡

M. Malgaigne and M. Taignot also refer the phenomenon to the presence of molecules of cholesterine in the vitreous humour, supporting the view of M. Bouisson, of Montpellier.

A woman was admitted into the Hospital Beaujon. One day she complained of pain in the right eye, which led to the discovery of the following appearances. When this eye moved, the iris was tremulous; a circumstance which, according to M. Robert, always denotes either absence of the crystalline lens, or softening of the vitreous body, though, strictly speaking, the alteration is confined to the hyaloid membrane. In this patient the pupil was round, and slightly movable, and dilated a little on the opposite eye being closed. Behind the pupil were perceived two little, whitish, opaline plates deeply seated, and consisting of portions of hyaloid membrane, not of the capsule, which would be opaque, and situated more forwards. On looking into the eye, sparks were seen to pass from time to time; opposite these plates they were fixed, and did not change their situation. On this account M. Robert is of opinion that these sparks must be due to the reflection of light from the hyaloid. Bodies completely transparent possess a certain reflective power when the light falls on them at particular inclinations. This explanation, like the others, is only an hypothesis, and as the disease is beyond the reach of art, may be regarded as only a matter of curiosity.§

From a very accurate examination of the phenomenon, made by Mr. A. B. Stout, of New York, in the same case from which Desmarres describes the affection, he has arrived at the following conclusions:

1. That the movable spangles are truly bodies in the vitreous humour, which possess considerable weight, and being projected by the working of the eye, traverse the vitreous humour, and then fall, according to the direction of gravity.

\* Desmarres, p. 663.

† Gaz. Méd., June 26, 1847, p. 519.

‡ Dublin Med. Press, Wednesday, Sept. 8, 1847, p. 148. M. Bouisson on the Pathology of Synchisis.

§ Gazette des Hôpitaux.

2d. That these bodies are crystalline and transparent, since they have an angular contour, and their presence before the pupil, or at the bottom of the eye, does not prevent vision, nor produce *muscæ volitantes*. If they were opaque they would be visible; they would absorb the light, and then the reflection from their surfaces would be much less brilliant. 3. That the sparkling is attributable to these small, transparent, crystalline bodies acting as so many prisms, which, as their faces are turned, on the one hand, towards the incident rays of light, and, on the other hand, towards the eye of the observer, or during their motions of rotation are placed in favourable conditions not only to refract but to decompose the light, they thus produce prismatic sparks in relation to the rays which reach the eye.

32. *Nitrate of Silver in Ophthalmic Affections.*—In the work from which we have so freely quoted, the nitrate of silver is one of the remedies most frequently resorted to, and in many of the most desperate diseases it is employed heroically. There can be no doubt that, in the experienced hands of Professor Desmarres, it is a remedy which frequently acts *cito, tuto et jucunde*, at the same time it is obvious, from his own remarks, that in inexperienced hands, or if inappropriately applied, it may produce the most unendurable pain, and the most destructive results. Other writers have guarded practitioners against its consequences, and in particular Mr. Lawrence has furnished the profession with a wholesome caution on this point, in the following practical remarks on the use of lunar caustic in ophthalmia\*.

There are three modes, Mr. Lawrence states, in which the nitrate of silver is employed in eye affections: 1st. In solution, varying in strength from two to twenty grains to the ounce. 2d. In substance. 3d. In the form of ointment. In determining on its employment in inflammation of the eye, it should be borne in mind that the question is not like that of using an ordinary lotion, which will do neither good nor harm. A single application will often excite active inflammation. If the use of the nitrate of silver in the ten-grain ointment, or in strong solutions, be repeatedly continued, it is capable of exciting a peculiar inflammation of an obstinate kind, attended with change of structure in the membrane, and leading to other alterations injurious, or even fatal, to vision. This kind of inflammation is so peculiar, that it almost deserves to be named from its exciting cause, lunar caustic ophthalmia. The conjunctiva becomes thickened and indurated; its papillæ undergo a kind of hypertrophy, and project upon the surface of the membrane, which thus loses its smoothness and polish, becoming granulated. These granulations are most numerous on the reflected portion of the membrane. The friction of this rough surface on the cornea enlarges its vessels, so that they admit no blood, and become tortuous; it causes also interstitial deposit and opacity, and even ulceration.

The inflammation thus induced varies in intensity. In the most active state the membrane is bright red, and produces a viscid puriform discharge, which agglutinates the lids. There is a gritty feel in the eye, with pain on motion of the lids, and on exposure to light. Hence the eye is kept closed, or only opened momentarily, so that the patient is, to all intents and purposes, blind as long as this state continues. In the chronic state the vascular congestion is less active, and the membrane paler: but the eye is weak, and will not bare exertion, and vision is more or less imperfect, from opacity of the cornea. The latter change is sometimes partial, the lower segment remaining transparent. The conjunctival lining of the lower lid is hardly rough, while that of the upper may be granular throughout.

Three cases are given by Mr. Lawrence in illustration of the serious consequences which occasionally supervene upon the injudicious use of the lunar caustic. The treatment of the condition in question is thus stated:

The restoration of the membrane to its natural condition is, perhaps, not practicable; it is difficult even to improve it so far as to prevent continued irritation of the cornea. It may be rendered tolerably smooth; but it remains thickened and hardened, and presents a white appearance, like a cicatrix, where it had been previously granulated. Moderate local depletion, with cold or tepid applications,

\* Med. Gaz., July 11, 1845.

is advisable when an active state of vascular disturbance is indicated by bright redness of the conjunctiva, with pain and intolerance of light. Under other circumstances, scarification of the diseased membrane, excision of the more prominent with scissors, and mild astringent applications are proper. Of the latter, the liquor aluminis comp. of the London Pharmacopœia, diluted in the first instance; the liquor plumbi diacetatis, and the weaker solutions of lunar caustic, are the best. The sulphate of copper may sometimes be cautiously used in substance. If any of these applications bring on a relapse of inflammation, they must be discontinued until the disturbance is removed. The citrine or the red precipitate ointment should be applied to the edges of the lids. Counter-irritation to the back of the neck is likewise useful.

33. *Nitrate of Silver in Purulent Ophthalmia.*—M. Vallez has also directed attention to what he believes to be injurious effects of the local employment of nitrate of silver in purulent ophthalmia; he speaks of its insufficiency, of the irregularity of its action, and of the violent pains which it produces, and he affirms that individuals have lost their sight by its employment. Without rejecting its use altogether, he recommends, when direct cauterization of the parts is indicated, that a stick of nitrate of silver should be covered with muslin, particularly when we have to apply it to the transparent cornea. Muslin or a piece of cambric, as soon as it comes in contact with the conjunctiva, absorbs its humidity, and thus prevents the irregular diffusion of the action of the caustic, at the same time the indirect effect of the lunar caustic takes place gradually on the part touched. If the individuals are intractable, it is best to accelerate its action by previously moistening that portion of the covering which corresponds with the caustic. In this manner we avoid an accident which not unfrequently occurs, viz., some particles of the caustic detaching themselves, and producing intense cauterization of the part on which they fix.

Immediately after the application M. Vallez passes a pledget, steeped in oil, on the part touched, to prevent the stiffness of the eyelids, and to facilitate their motion over the globe of the eye.\*

The editor of the Gazette remarks, that this mode of applying the caustic may have its advantages, particularly when the object is to obtain a slighter effect, as in cases of very chronic inflammation, where we wish to stimulate a large surface rather than to cauterize, properly so called.

We have passed over the articles relating to affections of the capsule and lens, and artificial pupil, with a few others, which, according to the arrangement adopted, should have been included in the present volume, since they demand a much more lengthened notice than our space admits of; but they will enter into the concluding part of this Report in our next volume.

Dr. Smith's "Treatise on Fractures in the Vicinity of Joints, and on certain Forms of Accidental and Congenital Dislocations," will afford us the opportunity of placing before our readers some most valuable practical matter on these subjects in our next Report.

(*Erratum.*—In the Report on Aural Surgery in our last Volume (p. 273-4) the name of Mr. Crosse, of Norwich, has been several times substituted for that of Mr. Toynbee. All the dissections of the ear there referred to were made by Mr. Toynbee, Mr. Crosse having only furnished the latter gentleman with the ears of a deaf and dumb person for dissection. The error originated with our weekly cotemporary, from whom we quoted the article.—H. A.)

\* Gazette Méd. de Paris, Avril, 1847.



### III.

## REPORT ON THE PROGRESS OF MIDWIFERY, AND THE DISEASES OF WOMEN AND CHILDREN.

BY THE EDITOR.

THE readers of the "Half-yearly Abstract," having the opportunity of tracing with facility the movements of the profession in each department of medical practice, cannot fail to notice that, in respect of the practical importance, as well as scientific interest of the communications, Midwifery, and the Diseases of Women and Children hold a prominent place. The proceedings of the past six months will, we are assured, bear comparison with those of any former period, in proof of which we would only refer to the information on the subject of the inhalation of ether in midwifery; the discussion on the subject of placental hemorrhage; and the influence of ulceration of the os and cervix uteri on the different functions of the female reproductive organs. The latter subject will be prominently laid before our readers, in our analysis of a work recently published by Mr. Whitehead of Manchester.\*

In the distribution of the matter contained in the present Report we shall follow the arrangement adopted on previous occasions.

#### § I.—*Diseases of Women Unconnected With Pregnancy.*

Much valuable information connected with the present section of this Report is to be found in the volume to which we have just alluded, and it will therefore be advisable to lay before the reader a brief sketch of the scheme and objects of that work, previous to entering upon the consideration of individual diseases.

Although professedly a treatise "On the Causes and Treatment of Abortion and Sterility," Mr. Whitehead's production embraces a far more extended field, as may be seen by a reference to the table of contents. The first and second chapters, for instance, occupying a hundred pages, are mainly taken up with the physiology of menstruation, including the signs of puberty, properties, quantity and source of the menstrual blood, age at which the function commences and ceases, influence of climate, occupation, &c. It also gives us the nature of the vaginal mucus, and its reaction upon the menstrual blood, all of which, though not suited to the present Report, afford matter which is extremely worthy of perusal. The third and fourth chapters discuss the diseases of menstruation, and chap. v the signs of pregnancy. Chaps. vi, vii, viii, and ix are occupied by the subject of abortion. The last chapter is devoted entirely to the consideration of the causes and treatment of sterility.

In his introductory chapter, Mr. Whitehead makes some general remarks upon the importance of diseases of the uterine neck, and the little attention which they have attracted in this country. In these remarks it appears that the author has scarcely done justice to a labourer who had preceded him in the same line of physiological study, and whose important investigations we have on several occasions been called upon to notice. It is satisfactory, however, to know, from correspondence upon the subject, that there was no intention on the part of the author to underate or pass over Dr. H. Bennet's valuable communications; but that, in fact, the investigations of the two writers were carried on simultaneously and independently of each other. That Dr. Bennet had the precedence in noticing the

\* Causes and Treatment of Abortion and Sterility. Lond. 8vo. 1847.

point in dispute, viz., the influence of ulceration of the os and cervix in producing abortion, is undeniable (see Half-yearly Abstract, Vol. IV., p. 147); and even he was forestalled by MM. Boys de Loury and Costilhes (Abstract, Vol. II. p. 132), whose communication on the subject appeared in the "*Gazette Medicale*," June, 1845.

The author, after some remarks on the speculum, alludes to an instrument of his own devising, by means of which, injections and other applications to the cervix uteri can be made by the patient herself. In another portion of his work he mentions the difficulty in causing injections used in the ordinary manner to reach the part affected, stating what any one may readily convince himself to be true, that the vaginal walls are applied so closely to each other, that it is next to impossible for the fluid to be projected the whole length of the canal by ordinary apparatus. It was in order to do away with this difficulty that he invented his "prolapsed tube." The instrument is made of glass, and is a cylinder measuring about five inches and a half in length, with an internal calibre of an inch at its uterine end, and gradually diminishing downwards to within an inch of its outer extremity, when it expands into a bell-shaped orifice. To this latter extremity a triangular wing is adapted, projecting near three inches from the tube at its outer orifice, whence it gradually diminishes in elevation as it approached the shaft of the tube in a curved form. This curved wing is kept next the pubis when the instrument is introduced, and guides it along the vaginal canal. The instrument being first introduced, injections or medicated pledgets of lint may be applied with certainty directly to the cervix uteri.

1. *Diseases of Menstruation*.—Mr. Whitehead treats of the diseases of menstruation under the usual divisions of retarded menstruation, suppression of the menses, difficult menstruation, and metrorrhagia. Under the head of amenorrhœa we do not find anything to detain us.

2. *Dysmenorrhœa*.—Mr. Whitehead's remarks on this anomaly of the menstrual function are brief, their chief value consisting in the narration of a case in which the dysmenorrhœal symptoms were associated with a fissured ulceration of the os uteri. The author, however, omits to state whether any improvement ensued from treatment directed to that lesion.

The occasional dependence of dysmenorrhœa upon ulceration of the os and cervix is much more distinctly enunciated by Dr. Edwards, of Bath, whose communication will be found among our extracts (art. 85).\*

3. *Vicarious Menstruation*.—Under this disease Mr. Whitehead relates four cases. In the first, the menstrual discharge was replaced by epistaxis; in the second, by leucorrhœa; in the third, by periodical bleeding from an ulcer; and in the fourth, by diarrhœa.

—A case is narrated by Dr. Barham, in which the discharge was periodically replaced by purpurous spots on the skin, and with bleeding from the gums, nose, and other mucous membranes. It appears to have resisted treatment †.

4. *Menorrhagia*.—On this subject also Mr. Whitehead is brief. He distinguishes *menorrhagia*, in which the hemorrhage is only an exaggeration of the menstrual flux, from *metrorrhagia*, in which the bleeding may occur at any period, and arises from diseased surfaces about the neck of the uterus, and seldom comes from the interior of the organ. This latter form is frequently seen at the last menstrual crisis.

—In the treatment of menorrhagia, Dr. Mitchell has derived great benefit from the Indian hemp, in doses of ten minims of the tincture every four hours. He states that sometimes the first dose will check a discharge which has lasted for months. It is stated to be equally beneficial in the debilitating draining which sometimes occurs during pregnancy.‡

5. *Diseases of the last Menstrual Crisis*.—Mr. Whitehead's observations on this subject are well worthy attention, as they tend to elucidate a class of ailments to which the practitioner in general pays little attention. The forms of disease most commonly met with at this period, Mr. Whitehead states to be three, each differing in the character of the accompanying discharge, and in the amount of consti-

\* Prov. Med. Journ., Sept. 8.

† Prov. Med. and Surg. Journ., Aug. 25, 1847.

‡ Dublin Med. Press, Oct. 6, 1847.

tutional suffering. The *first* is characterized by a muco-purulent discharge, generally denominated leucorrhœa; the *second*, often by vaginal hemorrhage, differing both in its properties and source from the menstrual product; the *third*, by watery, sanious, or serous, and generally fetid discharges.

In reference to the first form, the author states, in accordance with Dr. H. Bennet, that purulent leucorrhœa is to be regarded as evidence of disease, which for the most part is found on examination to consist in hypertrophy of the cervix, with ulceration of the os uteri. The most common form of ulcer is stated to be the simple granulating ulcer, with a defined margin. In addition to this, another condition of the uterus exists, to which the author, by an unseemly amalgamation of Latin and Greek, has denominated *endo-uteritis*, instead of the correct term, *endometritis*.

This condition consists in inflammation of the lining membranes of the uterus, and gives rise in the first instance to a glairy discharge, which afterwards becomes purulent. The only evidence of this disease exhibited by internal examination is a bright red ring surrounding the orifice of the os tinæ, with the escape of the characteristic product. The symptoms are all defined, being chiefly lassitude, with the anomalous pains and sensations common in spinal irritation. The treatment consists in leeching, and subsequently the introduction of a weak solution of the nitrate of silver into the cavity of the womb, or an ointment of the same material. The operation of injecting the womb is performed by a long-nosed syringe, with the aid of the speculum. Contrary to the opinion expressed by Dr. Oldham (see Report on Midwifery, Half-yearly Abstract, Vol. V. p. 242), Mr. Whitehead regards the proceeding as entirely without risk.

2d. Hemorrhage from the uterus is not uncommon in women who have ceased to menstruate. This depends, according to the author, upon venous congestion of the os and cervix, which may either terminate in varicose ulceration, or in the more severe event, uterine phlebitis.

3d. The diseases accompanied by fetid discharge are those familiarly known as cauliflower excrescence, cancer, &c., and need not be enlarged upon. The author cautions us against deciding on the existence of malignant disease from mere fetor of the vaginal discharges.

6. *Ulceration of the Os and Cervix Uteri*.—Our Abstracts (arts. 83, 84, 85) contain several valuable communications by Dr. H. Bennet and Dr. Edwards on the existence of the lesion in the virgin and in females of advanced life. In Mr. Whitehead's work we have likewise a full description of the different forms of ulceration as causes of abortion. These we shall mention more fully at a further page.

7. *Cauliflower Excrescences*.—Dr. Renaud has recently contributed an account of microscopical examinations of this morbid growth, showing it to be a modification of encephaloid, consisting of tufts of pedunculated capillaries, the interstices of which are filled up with the cells proper to encephaloid products. In the belief that the cauliflower excrescence has a malignant origin Dr. Renaud is at variance with Mr. Safford Lee, the last writer whose opinion we had occasion to notice (see Abstract, Vol. V., p. 244), and in which opinion we are disposed to join, as we consider that we have stronger grounds of belief in the non-malignant character of the growth from the period of life at which it occurs, the little sympathy which the system exhibits till it is prostrated by repeated hemorrhage, and from the results of ligature, &c., than we have to believe in its cancerous nature from the uncertain evidence afforded by the existence of nucleated cells.\*

8. *Non-malignant Disease of the Uterus simulating Cancer*.—Dr. Shearman, of Rotherham, has recorded three interesting cases, which prove the necessity of caution in our prognosis of uterine disease, even in cases apparently of the most marked character.

The first case is that of a single lady, æt. 48, who consulted Dr. Shearman for the relief of pains produced by what her medical attendant called cancer of the womb. For the last two years she had suffered from occasional sharp pains in the back and loins, shooting down the front of the thighs, with frequent discharges of sanious fluid mixed with blood. Latterly the pains assumed a periodical type, commencing about seven in the evening and continuing till six the next morning,

\* Med. Gaz., June 18, 1847.



when they entirely subsided. She was emaciated, and had the peculiar sallow and anxious face so often seen in scirrhus uteri. She was examined, and the os and cervix found to be normal. Dr. Shearman pronounced the case not to be cancerous. About June, 1846, Dr. Shearman was again sent for, and found the patient further emaciated, constantly bleeding from the uterus, with aggravated nocturnal pains. He succeeded in dilating the vagina, and afterwards introduced Simpson's uterine sound into the uterine cavity for a space of five inches. The os uteri was subsequently dilated with a sponge tent, when a tumour came into view, which was accidentally enucleated by the manipulation of the sound during a subsequent examination; the tumour proved to be fibrous. The nature of the disease was thus made clear.

The second and third cases were also instances of fibrous tumour. They were all remarkable for the severe constitutional symptoms to which they gave rise, and more especially for the periodicity of the pain by which they were accompanied.\*

9. *Ovarian Tumour.*—In the "Provincial Journal" of July 14th we have the account of a case of ovarian dropsy which was cured by Mr. Brown's plan of treatment, which, as the reader may remember, consists in the combination of bandaging, tapping, mercurial action, and the exhibition of diuretics. In the case in question the patient was nearly lost under the constitutional irritation of the mercury, and subsequently from an attack of fever, apparently caught from one of her children. On her recovery from this the tumour had disappeared. Mr. Hunt, of Herne Bay, who narrates the case, suggests that the mercury might be omitted, as had been previously conceded by Mr. Brown. (Abstract, Vol. V. p. 246.)

—Two cases of ovarian tumour are reported in the "*Philadelph. Med. Examiner*," August, in one of which a spontaneous cure took place by ulceration of the sac, and evacuation of its contents by the rectum; in the other, dispersion of the tumour was effected by the external use of iodine ointment, and the internal exhibition of the muriate of lime.

—The same journal also contains the sequel of the remarkable case of which we gave an account in our Fourth Volume. p. 261. It appears that the menses returned, and have remained regular ever since.

10. *Ovariectomy.*—A successful operation of removal of both ovaries for encysted disease has been performed by Dr. Frederick Bird. The preparations were exhibited at a meeting of the Westminster Medical Society. One tumour, which weighed upwards of twenty pounds, was of a compound character, the other was of irregular form, and made up of several distinct cysts; this tumour weighed four pounds. Both tumours were adherent to the abdominal walls, the larger one having been, in its upper portion, covered by the firmly adherent omentum, one of the arteries of which was greatly enlarged, and was ligatured. The patient experienced no untoward symptom, and rapidly recovered, menstruation having since recurred. The author directed the attention of the members chiefly to three features of the case; the probable cause of the disease, which was, in the case of the left ovary at least, to be distinctly traced to antecedent inflammation of that organ, whilst each subsequent change in the character of the disease seemed also to depend upon the accession of inflammatory states. He next spoke of the diagnosis, which, in this case, was at one period so difficult as to have induced him to defer the operation to the latest period, in the belief that the supervention of additional symptoms might render the propriety of performing it more certain. The chief difficulty arose from the loss of evidence commonly afforded by vaginal exploration, the uterus having been drawn up so far out of the pelvic cavity that it was impossible to make any satisfactory examination. The fact of menstruation having been uninterrupted by the previous destruction of the ovaries by disease, or by their subsequent extirpation, was interesting, and it was observed that, as in the present, so in the majority of such cases, there existed a marked tendency to menorrhagia. He regarded the case as useful in serving to extend the limits within which the extirpation of ovarian tumours might be successfully employed, and not less so as illustrative of the period at which the operation could alone be

\* Prov. Med. and Surg. Journal.

sanctioned, when the general health of the patient was beginning to sink beneath the exhausting influence of the disease.

[It is doubtful whether in the above case the sanguineous discharge from the vagina was an instance of true menstruation; we should rather consider that it was the result of varicose ulceration of the os uteri, a condition which Mr. Whitehead shows to be generally present in the so-called examples of menstruation during pregnancy (op. cit., p. 222). That true menstruation can occur independently of the maturation of discharge of ova, and consequently of the presence of ovaria, is contrary to the most received physiological doctrines of that process. (See Abstract, Vol. I. p. 273)] \*

—A successful operation for the removal of an ovarian tumour has also been performed recently in France, being the first instance of the operation in that country. The tumour was solid, weighing  $6\frac{1}{2}$  ounces [pounds?]. The operator, M. Workowski, preferred the short incision. The tumour originated in the right ovarium, and as the woman became pregnant subsequently, and was confined of a boy, the case was considered to disprove the Hippocratic dogma that the right ovary produced male conceptions.†

11. *Diseases and Malformations of the Vagina.*—*Bifid Vagina.*—Cases of this malformation have been recently recorded by Professors Meigs and Dickson. The cases by the first writer are as follows:—Being in attendance on a lady, in labour, and finding the pains sufficiently strong, he examined the state of the os uteri, which was of the size of a half dollar, the head of the child presenting, and the ovum unruptured. In the course of an hour more he examined again, and the os uteri was then nearly dilated. While pressing the palp of the index-finger to the left side of the pelvis, it caught in a seeming bridle, which at the instant made him fear the cervix uteri had been broken, so as to detach a semicircular portion of the os uteri, for the pains had been exceedingly sharp, and their returns had been announced by violent cries. It was but a moment that he indulged the idea of a rupture of the cervix, for upon pushing the index farther, and flexing the finger, he found he could draw the point of it outwards, pulling along with it the bridle in question. Still he did not understand the case until, having withdrawn the indicator, he examined with it the structure of the external parts, and then learned that the lady was possessed of a double vagina. Supposing that such a revelation would not be agreeable to her, he kept his own counsel, hoping that the child's head would come down through the right or the left channel without injuring the septum. But after the head escaped from the circle of the os uteri, the bridle or partition would not go definitively to the left or to the right, although he thrust it first one way and then the other. The tie was so strong that the fleshy septum, extending from the anterior to the posterior columns of the vagina, would not admit of the dilatation of the lower or outer third of the tube; and as the lady was very strong, and had powerful uterine pains, he began to perceive some danger of the vagina being ruptured by the vain efforts for expulsion.

Dr. Meigs now explained to the monthly nurse and to a relative of the patient the cause of the delay, and the necessity that had arisen. He therefore procured the requisite permission to expose the parts to an inspection. Upon this, the two orifices of the vagina were seen to be exactly alike, and the partition stretched across the head from front to rear of the passage, which by it was wholly prevented from dilating.

He now with a strong scissors divided the wall by a single stroke of the instrument, whereupon the child's head advanced, dilated the os magnum, and was speedily delivered with safety to both the mother and her infant. She never complained afterwards relative to the operation, and within a month I met her on foot in the streets.

Dr. Meigs narrates a second case thus:—A week after, I was called to a lady in her 30th year, in labour of her first child. Upon examining the state of the os uteri, I found the circle not much bigger than a quarter dollar, with thin margin, and within it the penis of the child: the scrotum being detected within the os uteri after the pain ceased. As it was night I went to another apartment and slept an hour, when being called I found the os uteri very much dilated, and a buttock, near which was the right foot, presenting.

\* Lancet, Oct. 30, 1847.

† Revue Médico Chirurg., Juin, 1847.

While inquiring into the state of the cervix, I hooked my finger into a bridle, just as I had done in the case above mentioned, and I confess that the same thought was obvious to me—viz., that she had broken off a half ring of the circle of the os uteri, but I immediately afterwards discovered that I had another case of double vagina under management. In this case the partition was very firm and thick, extending from the os magnum almost up to the os tincæ. I inspected the external structures, and the two vaginas were each perfect and alike, included within labia pudendi common to both. The female was safely delivered.

—Dr. Meigs also states that some years ago he was consulted upon a case of double vagina in a primipara. He delivered the woman through the right canal.\*

—Dr. Dickson's case is as follows: "Mrs. — came to the city, 1839, to consult me. She has been two years married—has always suffered from irregular and scanty menstruation; it is but a few months since she has become aware of the existence of some genital malformation. The vagina is divided—neither longitudinally nor transversely, but obliquely—by a membranous partition. Both tubes are long and narrow. Coition is difficult, particularly if the right (and somewhat anterior) opening be entered. The left, which is obliquely posterior, leads to the uterus, the os tincæ presenting; the right conducts to the side of the uterus in which the membranous partition loses itself; the cul-de-sac is not to be reached by the fingers; a long probe or bougie may pass up six inches or more, but gives pain, and, when withdrawn, is coated with bloody mucus. The dividing membrane lies in loose folds, is smooth and well lubricated; it projects slightly between the labia. It possesses very little sensibility."†

—A case somewhat similar to the above was also related at a meeting of the Pathological Society of Liverpool, by Mr. Burrows. "Mrs. Bright began to have labour pains at 9 P. M. December 25th, 1846. 'I saw her,' reports my assistant, Mr. Dale, 'at 5 A. M. December 26th. The pains were slight as to power, but hard to bear. When I introduced my finger into the vagina, to ascertain the state of the os uteri, I found interposed a membrane, which seemed to divide the vagina into two compartments. I then carefully passed my finger all around the vagina, to see if I could find an opening to the uterus, but did not succeed. The membrane was very thin and flaccid, so that I thought I could distinguish the os uteri through it, dilated to the size of a shilling. I hoped that the membrane would offer little resistance to the pressure of the child, and finally give way when the pains became stronger.'

"I saw her myself about 9 the same morning. On making an examination per vaginam, I was considerably puzzled; she had regular bearing pains, but I could not detect any os uteri. As the finger explored the vagina it seemed to traverse a smooth surface without any aperture or projection. Pausing and reflecting on the case, I examined again, but without obtaining any information as to the real anatomical formation of the parts, except that the vagina had no appreciable communication with the uterus. I thought that it was a case that would require some surgical operation. As the pains increased in power I felt a substance pressing against the superior parietes of the pelvis. At length, from the violence of the pains, tension and consequent thinning of the vaginal membrane, I felt through it a substance with an aperture resembling the os tincæ. I began to consider as to what means I should adopt, in order to open a communication between what I supposed to be the cervix uteri and vagina, and made another very minute examination, with the view of detecting, if possible, any slight aperture which might communicate with the uterus, but in vain. I waited till she had more pains, and as they began to increase in violence, I feared some injury might be done to the uterus or vagina if something were not done to enable the uterus to expel its contents. I explored once more the vagina, to determine what line of practice to adopt, when I was agreeably surprised at finding an aperture in the vaginal membrane, in the angle formed by the junction of the body of the os pubis with the right ischium, through which I could pass my finger, and detect the presenting part, which I found to be the breech. The os tincæ being fully dilated, and having receded from the presenting part, I determined to make an incision through

\* Philadelph. Med. Exam., Jan. 1847.

† South. Med. and Surg. Journ., May 1847.



the obstructing membrane towards the mesial line, and downwards in the direction of the sacrum. But Nature, almost always adapting her operations to the peculiar exigencies of the case, interposed, and accomplished the solution of the continuity, much better and much more agreeable to the patient than art could possibly have done. The interposing membrane gave way to the pressure of the presenting part, precisely in the direction I had intended to open it; and it appeared to fall down upon the sacrum. I then expected to find the psoas and iliacus muscles without their normal vaginal mucous membrane: but, to my great surprise, they presented their usual pelvic surface, being covered with the membrane (by which the pelvis is formed into a distinct compartment or cavity of the body), so that the pelvis was divided into an anterior and posterior cavity, having no communication but by the small aperture above mentioned." Mr. Burrows considers it inexplicable how impregnation could have taken place under the extraordinary circumstances recorded.\*

12. *Sterility*.—The conditions of the uterine system which are accompanied by, or are the causes of, barrenness in the human female are, comparatively speaking, untrodden ground, and we therefore regard Mr. Whitehead's observations upon the subject as particularly valuable.

Putting aside malformations and defect in development of the reproductive organs, this author regards chronic endo-uteritis, or irritable uterus, as it is called, as one of the most frequent causes of sterility. The symptoms of this state, as has already been stated, are chiefly languor, pelvic and crural pains, dysmenorrhœa, leucorrhœa, &c.; and, upon specular examination, thickness of the os uteri, with an irritable ring of inflammation surrounding the orifice, from which a quantity of sanious fluid, of a peculiar odour, is discharged. The prevention of pregnancy under these circumstances may, according to the author, be occasioned in three ways; first, the inflammatory condition of the lining membrane of the womb may prevent the formation of the membrana decidua: secondly, this inflammation may extend to the Fallopian tubes, and cause their obliteration; and, thirdly, the fluid secreted by the uterus may acquire characters which are fatal to the vitality of the spermatozoa. The latter cause is presumed upon the authority of M. Donnè, who found, by experiment, that while the spermatozoa remained active for several days in healthy vaginal mucus, they perished quickly in mucus taken from women labouring under certain diseases of the uterus. The same effect is said to be produced by the vaginal mucus secreted during pregnancy, which is much more acid than in the unimpregnated state. Mr. Whitehead, however, differs in so much from Donnè, that he believes the death of the animalculæ in the latter case to be caused, not by abnormal acidity of the vaginal mucus, but by the absence of the uterine mucus, which possesses alkaline properties, and to a certain extent neutralizes the vaginal secretion. Mr. Whitehead endeavours to show, by experiment, that in health uterine mucus is alkaline. This opinion, as may be seen, is to a certain extent opposed to the experience of Chais-saignac and Dr. Mitchell, who believe that the secretion from the fundus is acid, that from the cervix alone being alkaline. (See Abstract, Vol. V. p. 132.)

As an illustration of the author's treatment of these cases, we transcribe the following:—

—*Sterility during four years and a half—Endo-uteritis—cure by nitrate of silver injection into the uterus—Pregnancy*.—Mrs. S., æt. 31, married at twenty-four, and miscarried about six months after. During the whole pregnancy she had been troubled with leucorrhœa, with an assemblage of symptoms which had been treated as spinal irritation. When examined four years and a half after the abortion, the lower part of the uterus was in a state of inflammatory hypertrophy; the labia were thickened and projecting, and presented the ring of vivid redness, indicative of internal inflammation. To these parts the solid nitrate of silver was freely applied, leeches were placed alternately on the sacrum and hypogastric region, and alteratives administered. At the end of three months she improved remarkably, and became pregnant.

As pregnancy advanced, however, the spinal and abdominal irritation, leucorrhœa, &c., returned. After quickening she had threatening of abortion. The

\* Prov. Med. and Surg. Journal.

cervix was found large and excoriated. To this nitrate of silver was applied, and two grains of opium, with the same quantity of calomel, were given. On the following morning she was free from pain, and the pregnancy went on. The caustic was several times repeated; and she was delivered of a full-grown child.

After confinement, the same trace of nervous and uterine symptoms continuing, and not being remedied by change of air, she was again examined with the speculum. The cervix presented the same aspect, but the opposing margins of the labia were flabby and fringed with granulations. A weak solution of nitrate of silver was now injected into the cavity of the uterus. The operation, which did not cause the least pain, was attended with the most gratifying results; all irritability ceased, and after one repetition of the injection her health became perfectly re-established.\*

—The same state of the uterus, and its connection with sterility, has previously been pointed out by Dr. Evory Kennedy, under the title of “Uterine Catarrh.” His observations appeared in the “Dublin Quarterly Medical Journal,” of February, 1847, and were transcribed in our last Volume, p. 131.

### § II.—Pregnancy—Labour—The Puerperal State.

13. *Signs of Pregnancy*.—The fifth chapter of Mr. Whitehead’s volume enters with considerable detail into this subject, which he justly regards as one of the greatest importance. How difficult it is, in some instances, to ascertain the fact of pregnancy, even in its later months, and how readily the most experienced practitioner may be deceived, has recently received a most remarkable illustration in a case which will be found amongst our Extracts (art. 90).

Mr. Whitehead treats of the signs of pregnancy under three heads: 1st, the organic changes; 2d, functional deviations; 3d, sensorial manifestation.

*Organic Changes*.—In order to have a clear conception of the changes assumed by the gravid uterus, Mr. Whitehead gives us an account of the appearances presented by the virgin uterus, illustrated by engravings. The characteristic of a healthy unimpregnated uterus, as revealed by the speculum, is stated by him to be a *linear state of the orifice*, the labia being smooth and in close apposition. The alteration of this form affords, according to the author, the only test capable of revealing pregnancy with certainty previously to the time at which auscultation becomes available. What this alteration is the author proceeds to describe. It consists, he observes, in the gradual loss of the linear form, and a dimpling in of the orifice, which becomes more circular and patent. At six or eight weeks it has become oval, or distinctly circular, with a more or less uneven outline, according to the number of pregnancies, &c. After quickening, the changes in the os uteri are stated to be not sufficiently marked to denote the date of pregnancy. The author’s remarks on the abdominal enlargement, enlargement of the breasts, &c., do not require particular mention.

*Functional Deviations*.—The most important of these is the change in the menstrual secretion. As a general rule this function is well known to be suppressed; but numerous instances are recorded in which menstruation, or something very like it, has presented throughout the entire period of gestation. Mr. Whitehead has collected several instances of the kind, but distinctly denies that the discharge is ever truly catamenial, and asserts that “menstruation during pregnancy is for the most part, if not always, associated with an abnormal condition, generally ulcerative disease of the uterus, requiring at all times active remedial interference.” It is further stated that this hemorrhage, as it does not proceed from the uterus, need not interfere with gestation if duly attended to. The same explanation is given of certain cases of supposed menstruation during lactation. Whether these opinions will bear investigation it is for obstetricians to decide.

The author next mentions the state of the mucous membranes during pregnancy, and speaks of the increased temperature of the vagina; but makes no allusion to the violet tint which, as will be seen below, is regarded by some French authors as characteristic. The state of the urine during pregnancy is also touched upon.†

\* Op. cit., p. 422.

† Op. cit., p. 182, et seq.

14. *Signs derived from Inspection of the Vulva.*—M. Huguier considers the red-dish-violet colour of the vulva as diagnostic of pregnancy. This colour is not very apparent upon the internal surface of the labia, but becomes more so on the inner surface of the nymphæ near the meatus, and on the tubercle anterior to the vagina. It is first seen at the end of the second month. M. Huguier states that he has never seen this appearance in women who did not prove to be pregnant. He states also that the piliferous follicles become hypertrophied, and secrete a gluey adhesive fluid.\*

15. *Obstetric Auscultation.*—We have two communications to notice on this branch of auscultatory science: a new work by M. Depaul,† which is a complete treatise on the subject, and an essay by Dr. M'Clintock, which refers more particularly to its applicability as an auxiliary in the management of labour.‡ Mr. Whitehead also devotes a section to its consideration as a means of detecting pregnancy.§

M. Depaul's work of 400 pages is divided into two parts: the first of which we shall pass over, as it is confined to the history of obstetric auscultation. Of the second part, which is the more important, it will be impossible to give a full account, in the short space allowed in this Report, and we shall therefore be obliged to give only some of the author's general conclusions upon the various points, together with such of his comments as may appear desirable.

The two signs, or sounds, which he notices are those familiarly known as the placental souffle, and the beat of the fœtal heart.

For a reason which will presently appear, M. Depaul thinks that the term *uterine souffle* could be substituted for placental. It is stated to be unlike all other blowing sounds, and to be perceptible in some cases as early as the tenth week. It is produced, according to him, in the *arteries* of the uterus. It is not an infallible sign of pregnancy, and its importance is made by its connection with other signs. Mr. Whitehead, on the other hand, states that it is an unerring sign of pregnancy. A sound in all respects similar may be produced by enlargement of the uterus from other causes. It is not modified by the death of the fœtus, and is, therefore, no assistance in determining its vitality. It is not indicative of the precise spot at which the placenta is attached; nor is the presence of more than one souffle a sign of a double pregnancy.

With respect to the situation at which this sound may be most readily heard, M. Depaul states that, in 295 cases, where gestation had exceeded the fifth month, it was heard on each side in 180; on one side only in 27; at the fundus alone in 43; in 18 it was everywhere audible, and in 12 in three situations, the fundus, and just above Poupart's ligament, on each side.

The other auscultatory sign, the sound of the fœtal heart, is one of still more importance, and receives a corresponding share of attention. The author recapitulates the result of his researches on the subject under numerous aphorisms, the principal of which we give below:—

The sound resembles the ticking of a watch, and is generally unaccompanied by any other sound. Sometimes, however, it is associated with a blowing murmur, or rubbing sound.

The sound may be heard (in favourable cases) at the end of the twelfth week.

The situation at which the sound is heard with the most facility varies, according to the date of pregnancy and the position of the child.

The frequency of the fœtal pulsations is nearly the same at all stages of gestation, and are but little influenced by the uterine contractions, or by moral emotions of the mother.

In the author's opinion, it is impossible to confound the sound of the fœtal heart with any other sound which is heard in the abdomen.

Its presence is an infallible sign of the presence and vitality of a child.

Two distinct double pulsations, not isochronous, warrant the supposition of a twin pregnancy.

If three such sounds were present, it might be possible to recognise triplets.

\* Gazette des Hôpitaux, No. 74.

† Traité Théorique et Pratique d'Auscultation Obstétricale, Paris, 1847.

‡ Dublin Quart. Journ. of Med. Science, Aug. 1847.

§ *Op. cit.*, p. 209.



In the majority of cases, if the pregnancy be sufficiently advanced, the position of the child may be ascertained.

The modifications which may occur in the beat of the fetal heart should be carefully attended to, when these exceed certain limits, the life of the fœtus will be in danger.

The changes which indicate danger consist chiefly in irregularity of the pulsations, with diminution in frequency and force.

The importance of these facts will be appreciated wherever an operation has to be performed.

—We now proceed to analyze briefly the memoir by Dr. M'Clintock, the object of which, as we have before stated, is to point out the manner and extent to which auscultation can be made available in the management of the process of parturition.

The author, after a short historical notice of obstetric auscultation, states that in the commencement of labour the pulsations of the fetal heart are generally heard in one or other iliac fossæ, commonly in the left; the point at which they are heard with the greatest intensity indicates the part of the uterus with which the child's thorax is most closely in contact.

With regard to the part of the child which is in closest approximation to the uterus in the different presentations, the author observes that in ordinary vertex presentations, it is the back of the thorax, owing to the position which the child's body habitually holds in these cases—the legs being doubled up on the abdomen, the chin depressed on the chest, and the whole body bent forwards, so as to present a considerable convexity on its posterior part. Hence it follows, he remarks, that, in the first and second positions of the head (where the back of the child is anterior), we may expect to find the fetal pulsation most audible in the left and right inguinal regions respectively, whilst in the third and fourth positions it should be more posterior towards the woman's loins. Experience has convinced him that this is pretty uniformly correct; and the concurrent testimony of Kennedy, Nægele, Anderson, and others, tends to confirm it. The rotation of the head, even, from the third position into the second, and the fourth into the first, may be sometimes traced with tolerable accuracy, by making successive stethoscopic examinations, and noting the changes in the situation of the fetal heart. In facial presentations, owing to the attitude of the child, the *front* of the chest is the part which lies most contiguous to the uterine parietes, and the situation of the fetal pulsations have been found to agree therewith, being audible anteriorly (in the iliac region) when the head holds the mento-pubic position, and rather posteriorly when it is in the opposite, or mento-sacral position.

As regards breech presentations, Dr. M'Clintock has very frequently verified the observation of Dr. Collins, that, in such, the fetal heart is most distinctly heard near the umbilicus of the mother. The same remark equally applies to footling cases. He has practised auscultation in only two or three instances of arm presentation, and in these the fetal pulsations were not audible so high up as the umbilicus, though somewhat above the natural situation.

The author agrees as to the possibility of diagnosing twins, but remarks that it is not sufficient to hear two fetal pulsations at separate parts of the abdomen, but there must be *a want of synchronism in the beats, as heard at the two points*. The reason for this is, that sometimes the heart of a single fœtus is heard at two different parts of the abdomen, separated by an interval in which no pulsation is audible.

The next point which the author enters upon is one of much importance in the value of auscultation, as affording evidence of the child's condition during parturition. This inquiry refers to the character of the fetal sounds as to strength, regularity, &c. At the outset of the inquiry an important practical question presents itself, viz., does the child usually perish in a tedious labour, before the full development of those bad symptoms which indicate the necessity for immediate interference? In reply to this, the author coincides, with Dr. Collins, that where a patient has been properly managed from the commencement of her labour, the death of the child anticipates the symptoms in a laborious labour, which necessitates the operation of craniotomy. The bearing of this question upon practice is obvious.

To the complementary question, "Under what circumstances can the absence of the fœtal pulsations be taken as evidence of the death of the child?" the author remarks, that "if, in the course of a tedious labour, the fœtal pulsations, from having been distinct and normal become gradually rapid and weak; and that, as labour advances, they undergo a further change of character, so as to be with difficulty recognised at all; and if, finally, at a later period, after a careful examination, the auscultation fail to detect them, then we may rest assured that they have ceased, and that consequently the death of the fœtus has taken place." It is essential, the author further remarks, to the diagnosis that the chain of evidence should be complete, and that a series of examinations be made, for the finding the sounds absent on a single examination is no evidence at all. In this we entirely agree, for we have known in the latter months of pregnancy that the fœtal sounds, which have been inaudible, apparently from some sympathetic disturbance connected with congestion of the maternal circulation, have resumed their distinctness after the practice of a moderate venesection.

The author next turns to a class of cases where auscultation has been advantageously employed with a view of saving the life of the fœtus, by pointing out the exact time when delivery should be effected by means of the forceps or vectis. The cases to which the author alludes are those in which the ergot of rye has been given. In reference to the effects of this medicine upon the fœtal heart, he adopts the opinions, which we cannot help thinking are somewhat exaggerated, of Dr. Beatty (*Dub. Journ.*, vol. 22) and Dr. Hardy (*Abstract*, Vol. I. p. 184). However, it is unquestionable that the heart's action may, in some untoward instances, be reduced by it, and it is in these cases that the author employs the stethoscope as the exponent of the degree of danger to the child.

Another class of cases in which this practice may be available is, rupture of the uterus, and in labours complicated with convulsions. The author, after some observations on the value of the persistence of the placental bruit as a sign of fœtal life, in which he agrees with Depaul (*vide supra*, p. 251), terminates his paper with the subjoined recapitulation:

1st. Where the fœtus is alive, the sounds of the heart may always be detected at some period of the labour by any one of ordinary proficiency in obstetric auscultation.

2d. The precise region of the abdomen in which the fœtal heart is heard, affords auxiliary evidence of the position of the child in utero, but can never alone be relied upon for determining this point, or supersede the necessity of a vaginal examination.

3d. In presentations of the lower extremities, whether it be breech, foot, or knee, the fœtal heart is usually heard most distinctly near the umbilicus of the mother.

4th. Conclusive auricular evidence of the existence of twins is only to be drawn from the inequality in the number of beats of the two fœtal hearts, and not merely from any difference as to their respective positions.

5th. If, in the course of a tedious or difficult labour, the fœtal cardiac sounds, from having been distinct and clear, gradually become feeble and obscure, and ultimately inaudible, under these circumstances their absence is entitled to rank as positive evidence of the child's death; but without previous successive examinations this conclusion would be destitute of any positive character.

6th. In cases where ergot of rye has been given to hasten delivery, auscultation of the fœtal heart is the only certain way by which we can know when the medicine is beginning to act injuriously upon the child, consequently stethoscopic indications are alone entitled to confidence for determining the exact time when the state of the fœtus calls for interference.

7th. In cases simulating rupture of the uterus, the persistence of the pulsations of the fœtal heart is a strong proof against the occurrence of the accident, and the more advanced the period at which they are audible after the setting in of the bad symptoms, the more conclusive the evidence that rupture has not taken place; whilst, on the other hand, the sudden cessation of the fœtal pulsations, when they had been distinct a short time previously, would strongly corroborate other evidence of laceration of the uterus.

8th. After an attack of puerperal convulsions in the seventh or eighth month of

pregnancy, when labour has not immediately supervened, the prognosis should be much regulated by the state of the fœtus, for if it be proved that the child is alive, we may venture to hope that gestation will go on undisturbed, unless the convulsions recur, whereas, if the child has been destroyed, its expulsion will take place, most probably in from ten to fourteen days.

9th. No certain conclusions regarding the state of the fœtus can be drawn from the character of the placental soufflet.

10th. In cases of flooding before delivery, observation of the placental bruit may supply useful diagnostic information, by pointing out the part of the uterus to which the afterbirth is attached, and thereby showing whether the hemorrhage is accidental or unavoidable.

11th. Auscultation of the heart in stillborn children more accurately acquaints us with the state of the child's vital powers, than any other source of information.

16. *Pregnancy complicated with Tumour.*—An interesting example of this complication is related by Mr. Dashwood, of Beccles. The patient, æt. 29, began, in January 1846, to complain of constant pain in the left iliac region. On examination, a firm resisting tumour, the size of an orange, was discovered, unequal on its surface, and movable. The patient had not ceased to menstruate until the last period. Mr. Dashwood did not consider her pregnant, the question having arisen, and for confirmation of his opinion obtained the assistance of Mr. Page Scott, of Norwich, who coincided with him as to the non-existence of pregnancy. From the time the tumour continued to increase, the os uteri ascended out of the reach of the finger, and an incompressible and immovable mass gradually descended, pushing before it the posterior wall of the uterus, and encroaching so much on the outlet of the pelvis, that only a finger could be insinuated between it and the pubis. While making a second examination in the following June, Mr. Scott distinctly ascertained the movements of a fœtus, and the case assumed from this fact so formidable a character, that his assistance, as well as that of Mr. Crowfoot, of Beccles, was requested at the labour. This event commenced in September, and the os uteri, which was high up under the pubis, was felt to be dilated, and the presentation normal. Fortunately, the tumour which occupied the outlet was shortly felt to recede, and a stillborn child was eventually born with the assistance of the lever.

In the discussion which followed the narration of this case before the Edinburgh Obstetrical Society, Dr. Simpson expressed his belief that the tumour was of a fibrous character, and related several similar cases.\*

For the general principles of treatment in these untoward cases, see "Abstract," Vol. III. p. 225.

17. *Extra-uterine Fœtation.*—A case of Fallopian pregnancy, which proved by rupture of the tube at the end of three months, is recorded by Mr. Cobbold. It does not appear that any tumour was discovered during life, or any suspicion of the nature of the case entertained. The woman sank under symptoms of collapse from internal hemorrhage.

18. *Disorders of the Nervous System associated with Pregnancy.*—These disorders are the subject of an essay, by Dr. Lever, which consists, for the most part, of a simple narration of cases. The first disease which he notices as an occasional accompaniment of pregnancy is chorea, of which he gives five examples. In the first case, the irregular movements commenced in the second month of gestation, and, resisting all the approved methods of cure, subsided spontaneously a month after delivery. The second case was similar to the above. In the third, the chorea was cured before delivery by the sulphate of zinc in increasing doses. The fourth case was relieved by the same treatment, and subsided after delivery. The result of the fifth is not given.

The next nervous affection considered, is paralysis in connection with pregnancy, of which four instances are adduced. The first is peculiarly interesting, paralysis declaring itself with every pregnancy, and subsiding on delivery, again recurring with less intensity during lactation. The other forms of nervous affections are deafness, partial amaurosis, and aberration of mind; all of which are

\* Month. Journ. of the Med. Sciences, Aug. 1847.

† Prov. Med. and Surg. Journal, Sept. 22, 1847.



illustrated by appropriate cases, and all tend to establish the opinion that the morbid symptoms are functional only, and that though they may be relieved by medical treatment, the natural cure consists in the removal of the exciting cause by delivery.\*

—In connection with the same subject, we may notice that Dr. Simpson narrated cases of nervous disturbance associated with albuminuria in pregnancy and the puerperal state. His conclusions are to the following effect:—

1st. Albuminuria, when present during the last periods of pregnancy and labour, denotes a marked tendency to puerperal convulsions.

2d. Albuminuria in the pregnant and puerperal state sometimes gives rise to other and more anomalous derangements of the nervous system, without proceeding to convulsions; Dr. Simpson had chiefly noticed local paralysis, neuralgia, amaurosis, deafness, hemiplegia and paraplegia.

3d. Œdema of the face and hands, going on occasionally to general anasarca, is one of the most frequent accompaniments of albuminuria in the pregnant female.

4th. The presence of œdema, or of the nervous symptoms, should always make us suspect albuminuria, and if this suspicion is verified by examination, we should diligently guard, by antiphlogistic means, against the supervention of convulsions.

5th. Albuminuria and its effects are more common in first than in later labours, and generally then disappear after delivery.

6th. Albuminuria with convulsions, occurring in any labour later than the first, generally results from fixed granular disease of the kidney, and does not disappear after delivery.

7th. In cases of severe puerperal convulsions, &c., from albuminuria, the renal secretion is generally greatly diminished, and Dr. Simpson has found active diuretics of use after or with venesection, antimony, &c.†

—M. Devilliers has likewise communicated the results of some investigations on the same subject, the joint labours of himself and M. Regnault. These authors do not find albuminuria to be a frequent complication of pregnancy; but notice that eclampsia and œdema are the most frequent indications of its presence. The communication does not in any way advance our knowledge of the association, and, indeed, the acquaintance of continental pathologists with it is comparatively recent, and derived mostly from the prior notices of Bright, Lever, &c.‡

19. *Abortion, Statistics of.*—The subject of abortion is considered by Mr. Whitehead with great detail, and occupies a large portion of his volume.§ In his statistical inquiries, which have been very extensive, he has elicited some facts for which we conceive, the profession are little prepared. For instance, it appears that thirty-seven per cent. of mothers miscarry before the age of thirty years. It is popularly believed that first pregnancies more frequently terminate prematurely than those which come after. This does not accord with Mr. Whitehead's observations; on the contrary, he finds that the third and fourth, and the last, or that nearest the critical period, are the most unsuccessful.

The period of gestation at which abortion most frequently occurs is ascertained, by the analysis of 602 cases, to be the third month, the number for that being 275. The total number which happened within the first four months was 357, or considerably more than half.

20. *Causes of Abortion.*—Passing by Mr. Whitehead's remarks as to the causes of abortion most commonly recognised, we shall give the author's individual experience. In the intimate association, which exists between uterine disease and abortion, the author accords with Drs. H. Bennet, Evory Kennedy, Costilhes, &c. He was early in his investigations struck with the constancy with which leucorrhœal affections preceded abortion, and was led to examine into the state of the uterus with reference to this discharge. In so doing he almost invariably found disease of the cervix, in this again confirming the accuracy of Dr. Bennet's assertions. The great share which disease of this region has in producing abortion appears by a reference to Mr. Whitehead's cases, in which it appears that in 275

\* Guy's Hosp. Reports, vol. v., 1847, pp. 1–25.

† Revue Médicale, 1847.

‡ Month. Journ., Oct. 1847.

§ Op. cit., pp. 239–398.

out of 378 this cause was clearly assignable. The other causes were accidental injuries, placenta prævia, constipation, retroversion of the uterus.

21. *Congestion of the Uterine System as a Cause of Abortion.*—Plethora of the uterine vessels not unfrequently exists during pregnancy, and in Mr. Whitehead's cases was the cause of abortion once of twenty-five times. The symptoms are painful distension of the abdomen, sense of weight and bearing down, intermittent pains in the loins, and distension of the pudic, hemorrhoidal, and pelvic veins. On examination, the cervix uteri is found tumid and varicose. Of this condition the author relates cases in which the miscarriage was warded off by blood-letting, general or local, and the exhibition of sedatives.

22. *Uterine Disease as a Cause of Abortion.*—The two hundred and seventy-five females who aborted in consequence of uterine disease were, with few exceptions, examined with the speculum, either before or soon after the event, and exhibited the following catalogue of lesions: 1, inflammation and superficial erosion of the os and cervix; 2, varicose ulceration of labia of the os tincæ; 3, œdema of the cellular tissue of the cervix; 4, fissured ulceration of one or both commissures; 5, induration of the cervix, with or without abrasion; 6, endo-uteritis; 7, follicular ulceration; 8, gonorrhœal inflammation; 9, syphilitic disease; 10, prolapsus uteri. We shall briefly mention the author's remarks upon each of these divisions.

1st. *Inflammation and Superficial Erosion of the Os and Cervix.*—This lesion is described as the most common of those which produce abortion, having occurred in 25 per cent. of the cases in which this accident was attributed to uterine disease. In the majority of these instances the miscarriage occurred between the middle of the sixth and the middle of the ninth month. The simple erosion may implicate one or both labia, and extend or not within the neck. The ulcer presents a velvety surface, with elevated margins, and with the speculum is seen to be of a bright red colour, and covered with muco-pus. The symptoms are yellowish vaginal discharge, which is often alkaline, irritative fever, lassitude, sacral and pelvic pains, &c. The author treats this form of ulcer by leeches and sedatives, followed by the application of solid lunar caustic. We may state *en passant* that he regards the discharge from these ulcerations as capable of giving rise to blenorhagia by inoculation.

2d. *Varicose Ulcer.*—The symptoms which indicate the presence of this ulcer are the same as those previously mentioned, but in an aggravated degree. The discharge is at first mucous, afterwards becomes sanious or purulent, frequently mixed with blood. The ulcer is uneven, with numerous vessels ramifying around its circumference: it usually occupies only one labium. The treatment advised is early bleeding from the arm, lunar caustic, and the application of pledgets of lint dipped in tincture of matico, if there is much hemorrhage. It is the presence of this ulcer which, in the author's opinion, gives rise to the discharges of blood during pregnancy, which are erroneously regarded as menstrual.

3. *Edema of the Cervix.*—The third morbid conditions of the uterus which the author mentions as predisposing to abortion is a dropsical state, associated with a low inflammatory state of the cervix. It is said by him to prevail in about one in twenty cases. The treatment is strictly constitutional, unless an abrasion co-exists, when local measures above mentioned are adopted.

4th. *Fissured Ulcer.*—This is described as a more unmanageable form, occurring in about 4 per cent. of abortions from uterine disease. The fissures are single or more in number, and divide the labia to a greater or less depth. The symptoms are purulent discharge, mixed frequently with blood, severe aching pains in the loins, irritable bladder, pain in the lower part of the abdomen, &c. The treatment consists in alteratives, leeching, and lunar caustic to the part.

5th. *Induration of the Cervix* is the consequence of chronic inflammation. The symptoms are painful sense of constriction in the pelvis, pain in the vaginal regions, irritability of the bladder and rectum.

6th. *Endo-uteritis* is stated by the author to be a common cause of abortion during the earlier months of gestation. The symptoms are distension of the hypogastrium, deep-seated aching behind the pubis, irritable bladder, vaginal discharge, the cervix is hard, the labia tense and glistening, and a ring of vivid redness surrounds the os uteri. The author's treatment of this affection consists in antiphlo-

gistic and alterative remedies, with the injection of a solution of nitrate of silver into the uterus.

7th. *Follicular ulceration* consists in engorgement and erosion of the nabothian follicles.

8th *Gonorrhœal Inflammation*.—The author, in speaking of this division, advances the opinion that gonorrhœa is more generally an affection of the uterus than of the vagina. Though this opinion is not the general one, it is not confined to the author: for, if we are not mistaken, Ricord entertains much the same notion, and regards abrasion of the os as the only positive indication of virulent gonorrhœa. Mr. Whitehead further believes that neglected gonorrhœa in the female is a fertile source of chronic endo-uteritis, in which way we presume it acts as a cause of abortion, and that it is readily cured by the application of the solid caustic to the os and cervix. The ordinary method of injections he looks upon as useless.

9th. *Syphilitic Disease*.—The influence of the syphilitic taint in producing or predisposing to abortion has long been acknowledged, whether that taint exist in the mother or in the father: but the localization of the disease upon the uterus itself has not attracted much attention. Primary ulceration is confessedly rare, and is admitted to be such by the author as well as by Dr. Bennet and the French writers upon the subject; but the secondary effects, if we are to believe our author, are far from being uncommon.

The local pathognomonic signs of uterine syphilis are stated to be—1, endocervicitis,\* or inflammation of the interior of the cervix, with excoriation of the orificium uteri; 2, a mottled or patchy appearance of the cervix; 3, an aphthous condition of the same parts; 4, venereal warts. The treatment of this state need not be mentioned in detail, being that in ordinary use. We may, however, state that the author has derived great advantage from a decoction of the rumex hydro-lapathum as an anti-syphilitic, it being, in his opinion, superior to sarsaparilla.

10th. *Prolapsus uteri* is the last condition mentioned as predisposing to abortion. The most interesting portion of the author's remarks consists in his treatment. He objects forcibly, as we believe all practitioners of experience do, to the use of pessaries, and trusts to the cure of the ulcerations and engorgement, which he maintains to be the cause of the prolapse, aided by the insertions of astringent tents.†

In giving this brief analysis of Mr. Whitehead's views on the etiology and treatment of the predisposition to abortion, it is but fair to state that we cannot give an adequate view of their value without the aid of the numerous cases by which they are illustrated. For these we are compelled to refer the reader to the original work, the possession of which we are assured he will never have reason to repent.

23. *Prevention of Abortion*.—The prevention of abortion is treated of by Dr. Griffin as one of his medical problems; in connection with which he publishes some very interesting cases, in which he was enabled to break through the habit of miscarriage, by treating the patient as he would do for other diseases of periodical recurrence. The medicines which were most successful in his hands were zinc and valerian. In his first case the treatment was quite successful. The disposition to premature expulsion being controlled effectually. It is to be stated that Dr. Griffin does not put this forward as a certain method of prevention, but rather as a suggestion worthy of attention.‡

With the same object M. Laferla exhibits assafœtida; and also adduces the evidences of numerous cases.§

24. *Premature Labour*.—Dr. Segondi introduced the question, "Whether, in the case of several successive deliveries of a dead fœtus in the course of the eighth month, it is not admissible in a future pregnancy to induce premature delivery at the seventh month?" as a subject for discussion at the Scientific Congress held at Genoa, in Sept. 1846. In support of his proposition, he narrated two cases; one that of a lady who had produced eleven dead children at the eighth month, the

\* Another inharmonious compound. It should have been intro-cervicitis, or endo-auchementis, if the Greek be preferred.

† Op. cit., pp. 239-398.

‡ Dublin Quart. Journal, May 1847.

§ Encyclograph. Med., May 1847.



other that of a lady who had miscarried in this way five times. In these he considered, as every other method had been tried in vain, the means he proposed were justifiable. The discussion which ensued was of an interesting character, and elicited valuable opinions from some of the leading Italian obstetricians. Professor Centophanti remarked that it was necessary to ascertain whether the death of the child at the period mentioned was due to a defect in the mother or in its own developmental powers, and likewise whether it really died at the eighth month, or had not perished anterior to this, and been retained to the time of its expulsion. The latter case would negative the propriety of the operation, as far as regards the saving of the life of the child, the motive, indeed, with which it is proposed. With these restrictions, both he and Professor Vannoni agreed that, under the circumstances mentioned in the question, the induction of premature delivery was proper.\*

Upon this question the editor of the "Medico-Chirurgical Review," from which we quote, has the following pertinent remarks:—"This application of the induction of premature labour is of doubtful expediency. The question of the cause of the death of the *fœtus in utero* is involved in too much obscurity to admit of positive opinions being pronounced; but it seems to us, when we bear in mind the great difficulty in preserving and rearing premature children, that one whose vital powers were so limited as not to admit of retention of life *in utero*, would have its chances of living but little, if at all, increased by inducing its hasty expulsion. Admirable as this resource is in appropriate cases, and foremost as the practitioners of this country have shown themselves in employing it, the induction of premature labour is not an operation to be extended to additional emergencies without the gravest consideration."† It appears to us that if the assertions of Dr. Bennet, Mr. Whitehead, and others, as to the dependency of abortion upon disease of the uterine neck be borne out by further observation, the prevention of abortion as regards the mother will be greatly simplified. Where the death of the *fœtus* is the immediate cause of its expulsion, and the extinction of its life arises from causes inherent in its own organization, we cannot see, as is stated in the quotation given above, that its position is bettered by premature expulsion.

25. *Tonic Spasm of the Uterus*.—The "Clinique de Montpellier" contains an article translated from the Spanish by Signor Corral y Ona, describing an affection under the term uterine tetanus, which appears to be nothing more nor less than tonic spasm of the organ, or, as it is called by Dr. Rigby, "stricture" of the uterus (see Lib. of Med., vol. vi. p. 212). The author relates two cases in which the spasm supervened upon the exhibition of ergot, and was so long continued, in spite of bleeding, warm baths, &c., that he was necessitated to have recourse to the forceps. Both women died from metritis.

26. *Uterine Inertia*.—A very remarkable case which may be referred to this condition, is reported in the last volume of "Guy's Hospital Reports," by Dr. Oldham. The case was as follows:—

The woman, æt. 41, who had miscarried several times, was engaged to be attended by Mr. Amsden, and who was sent for on the 26th of June, 1845, as she had been seized with flooding. She was put to bed, and on examination, the os uteri was found to be closed. Dr. Oldham saw her on the 30th; she was then complaining of tenderness in the abdomen, but without sickness or febrile symptoms. The abdomen had the ordinary appearance of the ninth month. On examination, the os uteri was within reach, the anterior segment round, and distended by the fetal head; the os uteri readily admitted the finger, and the fetal head, covered by the membranes, could be felt. The breasts had become swollen and hard, and had all the appearance of the breast three days after delivery. The fetal heart could not be heard, or any movement detected, whence the death of the child was surmised. Under these circumstances, little or nothing was done, and labour was waited for.

On the 12th of July, no appearance of labour pains, but a fetid discharge, with puffs of gas came from the vagina. She is now weak, with flushed face, weak pulse, and furred tongue. The os uteri admitted two fingers, allowing the bones of a decomposing fetal cranium to be felt. There had been no uterine action. Efforts were now made to empty the womb, first by ergot, which was ineffectual,

\* Annali Universali, vol. cxxi. p. 172.

† Med.-Chirug. Rev., Oct. 1847.

afterwards by dilating the cervix. Dr. Oldham, however, found that this dilatation could not be effected to any extent. Galvanism was then resorted to, both externally, and with one of the conductors applied by the vagina, but all to no purpose, the uterus remaining perfectly passive. A great quantity of decomposing matter was released from the womb, by passing a small hook through the os uteri, and injecting a stream of warm water within the cavity. On the 17th of July, the placenta was removed in a putrid state. The womb then began to shrink, and eventually the greater part of the fœtus was removed piecemeal. The abdomen daily diminished in size, and the discharge lost its fetor. During this time the patient's powers were sustained by ammonia and bark.

The subsequent progress of the case was at one time encouraging, but in September she complained of tenderness in the abdomen, with severe pain in passing water. Dr. Oldham thought that the uterine wall had ulcerated through, and that the remainder of the fœtus had escaped into the abdomen, a surmise which was verified *post-mortem*. The patient from this time rapidly sank, and died three months from the time at which labour was due.

On examination it was found that the anterior portion of the uterus had ulcerated away, and that the fœtal bones were contained in a sac formed by the intestines above, by the posterior wall of the uterus behind, and by the abdominal parietes and bladder below, and in front.

In his comments upon the above case, Dr. Oldham calls attention to its rarity, and alludes to one something similar recorded by Dr. Cheston in the fifth vol of the "*Medico-Chirurgical Transactions*," in which the fœtus escaped through the uterine walls, and was found almost perfect in a bony cyst, at the end of fifty years.

The author points out the general resemblance of the case to certain forms of extra-uterine fœtation, for which it might have been mistaken, but for the certain evidence afforded by vaginal examination. He does not explain the cause of the uterine paralysis.\*

27. *Spontaneous Evolution*.—An additional instance of this unusual occurrence has been met with by Dr. Keiller. When he saw the patient, the liquor amnii had been some time discharged, and the vagina was occupied by an arm greatly swollen, the shoulder being firmly grasped by the os uteri. Dr. Keiller failed in repeated attempts to turn, and the uterine action continued excessive, in spite of the use of opium, &c. Suddenly, during a violent pain, the arm was withdrawn, and the feet and body were almost simultaneously expelled. The child was dead, but the mother made a good recovery.†

28. *Placental Presentation*.—The period embraced in our Report has been fertile in communications upon this subject, or points connected with it. In proof of which we may mention—1. A paper by Mr. Barnes, "On Flooding before Delivery, from Adhesion of the Placenta to the Os and Cervix Uteri."‡ 2. "On the Construction of the Placenta, and the Mode of Communication between Mother and Child," by Mr. Adams.§ 3. "On the Source of Hemorrhage in Partial Separation of the Placenta," by Dr. Chowne.|| 4. On the same, by Dr. Radford.¶ 5. "On the Treatment of Uterine Hemorrhage from Placental Presentation," by Dr. Lee.\*\* 6. "Notes in Answer to Dr. Lee, regarding the General Mortality of Placental Presentations," &c., by Professor Simpson.†† 7. "On the Maternal Mortality in Placenta Prævia," by Dr. Radford. 8. "Further Observations on the Treatment of Uterine Hemorrhage from Placental Presentations," by Dr. Lee.‡‡ 9. "On Placenta Prævia," by Dr. Tyler.§§ 10. "Observations on Placenta Prævia," by Mr. Jones.|||| Such of these as are not solely occupied with personal controversy we shall proceed to notice.

29. *Source of Hemorrhage in Placental Presentation*.—There are three opinions now before the public, upon a point which we should have conceived might have been set at rest by a few carefully conducted anatomical investigations: first, that which is generally entertained, and of which Dr. Lee may be looked upon as the

\* Guy's Hosp. Rep., vol. v. p. 105.

† Lancet.

‡ Lancet, Aug. and Sept., 1847.

\*\* Ibid.

†† Lancet, Oct. 16.

|||| Prov. Med. and Surg. Journ., Oct. 6, 1847.

† Month. Jour. of Med. Science, July, 1847.

§ Med. Gaz., Aug. and Sept., 1847.

¶ Ibid., Sept. 18.

†† Ibid., Oct. 9.

§§ Dublin Quart. Journ., May, 1847.

exponent, viz., that the blood proceeds from the uterine sinuses; secondly, that promulgated by Dr. Simpson (see Abstract, Vol. III. p. 121), that it proceeds mainly from the detached portion of the placenta; and, thirdly, Dr. Radford's opinion, that it proceeds from both these sources combined. Mr. Barnes appears to be of the latter opinion. Mr. Adams, holding the theory that the placenta "is a portion of the fetal appendages, having no connection with the maternal parts but by imbibition," as a matter of course regards the uterine sinuses as the sole source of those losses of blood by which the mother so frequently perishes. Dr. Chowne, whose essay is an elaborate production, holds the same opinion. That his view is the correct one he assumes for various reasons; among others, because in post-partum hemorrhage, after the removal of the placenta, there can be no other source; because dangerously copious hemorrhages may occur in the unimpregnated state of the uterus, and in the case of uterine hydatids, where there is no placenta; and because the blood has, in the case of inverted uterus, been seen to pour from the uterine vessels, when the placenta was peeled off previous to the attempt to reduce the organ.

—Dr. Radford's paper is a criticism of the one published by Dr. Chowne, taking the same divisions of the subject, and criticising them seriatim. Dr. Radford adheres to the opinion previously expressed by him, that, although the great bulk of the hemorrhage proceeds from the uterus, a very considerable quantity also flows from the placenta.

30. *Maternal Mortality from Placental Presentation.*—The question of the relative mortality from placental presentation, under the old operation of turning, and that of evulsion of the placenta, is apparently as far as ever from being satisfactorily solved, and has recently given rise to a discussion between Drs. Simpson and Lee, not of the most amicable kind, as well as to certain anonymous attacks upon the former writer, which, like most writings to which the author has not the courage to append his name, do not redound to the credit either of the writer or the profession to which he belongs.

Of the papers by Drs. Lee and Simpson we do not propose to give any detail, simply stating that each writer respectively charges the other with inaccuracy, and that they are written in a temper too strictly personal to allow of any satisfactory analysis of their contents.

31. *Mortality to Mother and Child under Evulsion of the Placenta.*—Dr. Radford gives two tables of all the cases, as far as he has been able to ascertain them, in which the placenta has been extracted before the child. The first includes cases in which the operation was intentionally performed; the second contains cases in which the placenta has been ignorantly separated and left, and afterwards extracted with the exception of three, in which the placenta was unintentionally separated in the endeavour to turn.

The first table includes forty-two cases, of which twenty-eight are complete, and five partial placenta prævia; of nine there is no account given; in all, the placenta was detached by the hand; in eighteen, turning was performed; in six, it is presumed to have been so; in one, the child was extracted by the presenting leg; sixteen were terminated by the natural efforts; one by the vectis, one by the perforator and crotchet. In thirty-three, the flooding was profuse before the operation; in two, presumed to be so; in six, no statement is made on this point; in twenty, it ceased after the placenta was detached; in eight, it was presumed to have ceased; in six, there is no account given. Thirty-nine mothers were saved; three were lost, one in a few hours; four children were saved; twenty were lost; five died some time before labour; in eighteen no statement was made.

Table II. contains fourteen cases; in ten the placenta was ignorantly separated and extracted by the hand; in one, a portion was cut off, the remainder afterwards extracted; in three, the placenta was unintentionally separated in turning; two were terminated by the natural efforts; ten by turning; two by forceps. In twelve, the previous hemorrhage had been great; in one, not profuse; in one, not stated; in seven, it ceased after the separation of the placenta; in three, it considerably abated; in two, no account given; in one, a good deal of blood was lost. Eleven mothers lived; two died; three children were saved, nine lost; of two no account given.\*

\* Lancet, Oct. 16.



32. *Treatment of Placenta Prævia*.—Among the writers above alluded to, two opinions exist as to the propriety of extracting the placenta. Dr. Lee strenuously opposes it under any circumstances. Dr. Simpson and Dr. Radford are, as is well known, advocates for the plan under certain conditions. Mr. Barnes (op. cit.) considers that Dr. Simpson has the honour of having "effected a valuable improvement in obstetric practice, by having exposed the dangers of turning, and by comparing the results of this practice with the favourable results which have followed the complete expulsion or extraction of the placenta." On the other hand, Dr. Tyler\* states, "that until stronger evidence is brought forward in corroboration of his (Dr. Simpson's) views, I would rather persevere in the old line of practice in this emergency, than adopt a plan so much opposed to our present state of anatomical knowledge;" and Mr. Jones† is also adverse to it, but clearly misunderstands Dr. Simpson, in believing that he advises the plan as a general rule instead of turning.

33. *The Plug*.—Mr. Barnes, from having observed that, in favourable cases, the detached portion of the placenta becomes plugged up by coagula, draws from the fact a conclusion in favour of the plug in the early stage of unavoidable hemorrhage. "Supposing," he observes, "you are called to a case of flooding from partial placental presentation, where, although the hemorrhage has been abundant, still the patient's health is good; the os uteri is scarcely at all dilated; it is rigid. In such a case, in order to effect either turning or total separation of the placenta, the hand must be forced through the os uteri at the risk of laceration, and the other dangers attending those formidable operations. But if, by plugging the vagina, you promote the blocking up of the bleeding orifices, by favouring the coagulation of the blood, you may safely reach the period when the os uteri shall be fully dilated, and when that portion of the placenta which had been adherent to the cervix has been wholly detached, and further hemorrhage precluded by the sealing up of the detached placental surface. The remainder of the placenta, though still adherent, as it expands and contracts with the expansion and contraction of the uterus, will not bleed. If by following this practice you can safely bring your patient to the termination of the first stage of labour, viz. the complete dilatation of the os uteri, the case is resolved into one of natural labour, and, unless any other complication arises, may be treated in the usual manner."

Dr. Tyler (loc. cit.) also speaks of the great advantage to be derived from the use of the plug, when the soft parts are rigid and undilated, as a means of saving the profuse loss of blood to the patient. He is aware that many object to its use in unavoidable hemorrhage at the full time, from the dread of internal hemorrhage; but he thinks the fear groundless in most cases, and the danger, when it does threaten, may be avoided by watchfulness on the part of the attendant. He prefers sponge dipped in vinegar and water to other material.

34. *Turning*.—In his paper on placenta prævia above mentioned, Mr. Jones has the following observations on the operation of turning: He remarks that the usual causes of failure in performing the operation of turning are—1st, waiting too long for the dilatation of the os uteri; 2d, too great haste in performing the operation.

He remarks that, however unanimous the profession has hitherto been in considering turning the right practice in placenta prævia, teachers of obstetrics have differed as to the proper time for performing the operation.

The following directions are given by professors: Dr. Hamilton says, "If possible, delivery should never be attempted till the os uteri be dilated, and the membranes begin to protrude." Dr. Burns says, "Whenever we find the os uteri softer, and in any degree more open than its usual state, and it admits the finger to be introduced easily within it, we may deliver safely, and if the hemorrhage be continuing, ought not to delay." Dr. Merriman observes, "It is necessary that there be a certain degree of softness and dilatability in the uterine; but the dilatability is not always to be judged of by the actual dilatation of the part, for sometimes in hemorrhage the os uteri will be very capable of being dilated by art, though it hardly seems sufficiently open to admit a single finger." Dr. Lee says, "It is seldom safe to attempt delivery by turning before the os uteri is so far

\* Dublin Quart. Journ., May 1847.

† Prov. Med. and Surg. Journal, Oct. 6.

dilated that you can easily introduce the points of the four fingers and thumb within it, however soft and relaxed it may be. Until dilatation has commenced and proceeded so far, I am convinced there are very few cases in which the operation will be required or completed without the risk of inflicting some injury on the os uteri.\*

That such discrepancy of opinion should exist amongst the teachers of midwifery on a subject of so much importance, Mr. Jones thinks must tend to produce in the practitioner indecision and delay, at a time when firmness, promptitude and decision can alone give security to his patient.

As the hemorrhage usually occurs between the sixth and eighth month of pregnancy, and there is no probability of preserving the life of the child before the seventh month, it becomes desirable, of course, to postpone delivery till after that period; therefore if the os uteri be but slightly patent, the hemorrhage recurring, but not continuing long, delay might be justifiable, and we might rely on the plug and other usual means for restraining the hemorrhage. But as the reasons for delay refer principally to the safety of the child, and the mother's life is continually in danger until delivery be effected, he advises that if the os be soft and dilatable, although it should not admit more than a finger, turning should be adopted at once, if the hemorrhage continues unabated.

If delivery has been delayed till the energies of the system are greatly expended, the author remarks that the danger of turning becomes proportionably great; and inconsiderate haste in effecting delivery under these circumstances is not unfrequently followed by the speedy death of the mother. Her safety depends on the slow, cautious, and deliberate efforts in performing the operation of turning without reference to time, but solely with the view of supporting to the utmost the nearly exhausted energies.\*

—*General rules of treatment.*—Dr. Tyler's essay concludes with the following general rules of treatment in placenta prævia:

1st. In cases of partial placental presentation, he should avail himself of the earliest opportunity to rupture the membranes, and evacuate the uterus of all its fluid contents.

2d. In the same class of cases, after the escape of the liquor amnii, should vigorous uterine action not ensue, to encourage this desirable end by means of friction over the fundus uteri, the application of a binder, the administration of ergot of rye, or the use of galvanism, as recommended by Dr. Radford.

3d. In complete placental presentation, when the os uteri is rigid and undilated, never to attempt to extract the placenta through it in that state, but to plug the vagina carefully by means of a soft sponge, previously steeped in cold vinegar and water.

4th. As soon as the os uteri has been sufficiently dilated to admit of the introduction of the hand, to seize a foot and deliver cautiously.

5th. Should there be no doubt of the child's being dead, and the head presenting, it may be delivered by the crotchet, after lessening its head.

6th. As I attribute the entire cessation of the hemorrhage which occurred in Dr. Simpson's cases, and those of others, after the extraction of the placenta, to the fact of the uterus being thereby entirely emptied of its fluid contents, and allowing the presenting part of the child to be pressed against the bleeding orifices of the uterine vessels; that in certain cases the placenta might be pierced with a gum-elastic or silver catheter, and the liquor amnii thus allowed to escape. This operation is applicable to cases where the feet present, or where craniotomy is decided upon (in head presentations), either on account of distorted pelvis, or from the fact of the child being dead.

35. *Galvanism in Uterine Hemorrhage.*—Dr. Radford has reported the following additional instance of successful application of galvanism to the uterus in a case of accidental hemorrhage, which shows that the stimulation of the uterus may be efficiently produced *mediately* through the abdominal parietes:—†

On October 13th, 1846, he was requested to visit Mary Daniel, who was said to be much reduced by continued flooding. She was now in labour of her fourth child. Her 1st labour was quick, and the child a girl; in her second, she was still more speedily delivered of a boy; a third was also a boy, after a lingering labour.

\* Prov. Med. and Surg. Journal, Oct. 6.

† Dublin Quart. Journ., May 1847.

All these three labours were attended with excessive post-partum flooding, in which extreme syncope occurred, and were followed with great weakness, from which she was a long time before she recovered. Her present labour (the fourth) began at eleven o'clock P. M., October 12th, and regular pains continued at short intervals until half-past five the next morning. When the midwife visited her, the os uteri was nearly fully dilated, the membranes had spontaneously ruptured, and a small quantity of liquor amnii was discharged. There was a continued dribbling discharge of blood, which was accompanied at times with gushes. The pains now altogether ceased, and did not return for two or three hours, and then so slightly as to be scarcely felt by the patient.

Dr. Radford arrived with the galvanic apparatus at the patient's house at twelve o'clock at noon. She was very much exhausted, her countenance ghastly pale, her lips and tongue were also very pale, the pulse was very frequent, and so feeble as sometimes not to be felt. The os uteri was nearly fully dilated, and included a portion of the head which had passed through it; there was a dribbling, pale, sanguineous discharge; there had been no pain of consequence for a considerable time, as above reported.

Dr. Radford now applied his hand on the abdomen over the uterus, and was immediately struck with the excessive thinness of the abdominal and uterine parietes. The rotundity of the breech, and the sharp and projecting parts of the child's limbs were easily felt, and one part could be as readily traced to another as if only covered with two thin folds of cotton cloth. In fact, I could easily grasp a limb. The galvanic power used at first was slight, but gradually increased until the lever was placed at the highest point. The two hand conductors were only used, and applied externally on opposite points on the abdomen, varying from time to time their relative positions, thereby carrying the galvanic fluid through the longitudinal, transversal, and oblique diameters of the uterus. The beneficial influence of the remedy was soon apparent, and the extreme atonic state of the uterus was now gradually exchanged; its parietes became firmer, and the edges of the organ, which before were so soft as to appear to float amongst the abdominal viscera, from not being traceable, now became defined. This favourable organic condition proceeded, and the induced pains, at first grinding and slight, became powerfully expulsive, and the child (a girl) was born alive at half-past one o'clock, about an hour after we began our operation. As soon as the uterine energy was fully roused, the child was rapidly and forcibly expelled. The hand was applied over the uterus, which was found firmly contracted. The discharge of blood ceased as soon as the uterus began to contract. The placenta was expelled in about five minutes. The uterus had further firmly contracted. There was not the least hemorrhage, and the constitutional condition of the patient was much improved, and indeed much better than could reasonably have been expected.\*

36. *Operative Midwifery.—Incision in Cases of Rigidity of the Neck of the Uterus.*—M. Nichet regards the above operation as warranted under the following circumstances:—

1st. In puerperal convulsions, in which the extraction of the fœtus is judged to be necessary.

2d. When serious hemorrhage declares itself at the close of pregnancy, and the neck of the womb remains undilatable.

3d. In narrowing of the pelvis, when it has been ascertained by measurement that the application of the forceps will be necessary, and the cervix does not readily dilate.

4th. Finally, when the head is separated from the trunk and remains within the womb, and the rigidity of the cervix will not allow of the introduction of the hand.

[Incision of the cervix has been repeatedly advised by British obstetricians in certain cases of rigidity of that part, and more particularly of late by Drs. Lever, Oldham, and Professor Simpson; but we much doubt whether either of these physicians would consider the conditions pointed out by Nichet as indications which warrant the operation. In the second case more particularly, in which the bleeding commonly arises from implantation of the placenta upon the cervix, the danger of incising the part may be readily conceived.]†

\* Report of the Manchester Obstetric Society.

† Journ. de Méd. de Lyon.



—In performing this operation, M. Chailly Honoré recommends the use of curved scissors in preference to the knife, and advises a number of small incisions rather than three or four deeper cuts, as more serviceable in inducing dilatation, and less likely to cause serious hemorrhage. [For other notices of the same subject, the reader is referred to "Abstract," Vol. II. p. 132, and Vol. IV. p. 144.]\*

37. *Turning, a Substitute for Craniotomy*—Dr. Simpson states that he has practised turning as an alternative for craniotomy and the long forceps, in several cases in which the head had been morbidly detained at the brim of the pelvis, from the slighter forms of disproportion between the two: and he believes it to present various advantages over embryotom. It gives the child a chance of life; it is more safe to the mother, because it can be performed earlier in the labour, and more speedily; it enables us to adjust and extract the head of the child through the imperfect pelvic brim in the most advantageous form and direction, the head flattening *laterally* under the traction; the neck of the child (if it were living, or only lately dead) is so strong as to allow us to exert such a degree of traction upon the obstructed head, that the sides of the cranium might become very greatly compressed, or even indented under it, and that without necessarily destroying the child; and, lastly, he observes, it is a practice which can be followed when proper instruments are not at hand, and the avoidance of instruments is generally desirable when it is possible.†

38. *Cæsarian Operation*.—Three instances of this operation have been recorded since our last Report, all of which were fatal. In two the children were living, but died, one at the end of two, and the other at four months. The references are given below.‡

39. *The Application of Ether Inhalation in Midwifery*.—We proceed to give, with as much detail as our space will allow, the more recent experience of the effects of this agent on parturition; for the earlier instances of its successful use we refer the reader to our Report on the subject in our last Volume.

At a meeting of the Royal Scientific Association, at Göttingen, a paper was read by Professor Siebold on the applicability of ether inhalation to midwifery, of which the following is a brief analysis.

The author commences by proposing two questions. 1. Whether ether inhalation may be employed in natural labour for the purpose of preventing pain. 2. Whether it is to be restricted to operative midwifery. In discussing the first of these questions the author points out that labour pains are of two kinds, the one spontaneous, and necessarily attendant upon the process, the other extraneous, and arising from accidental causes, such as manual and instrumental interference, &c. We gather from his remarks that the former pains are not to be interfered with, or only when they are inordinately severe, but of the others, or induced pains, he observes, "a remedy which promises to relieve these must be welcomed in operative midwifery, and even if they cannot unconditionally speak in favour of ether in natural labour, yet this offers no tenable argument against its use in obstetric operations."

The experiments performed by Professor Siebold in the course of his inquiries, produced results which are mainly in accordance with those of Professors Simpson and Dubois, mentioned in our last Report. He experimented both on non-pregnant and pregnant women, and found that in the latter no injurious effect was produced upon the fetal heart. In operative midwifery, including turning and the use of the forceps, the vapour was found of the greatest service; the vagina and os uteri becoming so lax as to allow of the application of instruments with the greatest facility.§

—The "*Gazette Médicale*" also contains a lengthy paper, by M. Roux, on the obstetrical use of ether, illustrated by two cases, one of turning, the other a forceps case. We can only find room for the following conclusions:—

1st. Parturient women are brought under the influence of ether as readily as others.

2d. The puerperal state is not unfavourably affected by the etherization.

\* Bull. de Thérapeutique, &c., 1847. † Month. Journ. of Med. Science, July 1847.

‡ Neue Zeitsch. für Gebundkunde; and Case by Mr. Balfour, Month. Journ., Aug. 1847.

§ Reported in Med. Gaz., June 11, 1847.

3d. In natural labour no evil result follows the alleviation of pain by ether.

4th. In difficult labour it is incumbent upon us to exhibit ether, both for the sake of the mother and the child.

5th. The uterus and abdominal muscles continue to contract during ethereal insensibility. In the cases in which their contraction have ceased, they have done so prior to the exhibition of ether.

6th. The infant is unaffected.

7th. The consequences of labour, such as the secretion of milk, &c., are not influenced.

8th. In very severe labour, as after surgical operation, there has appeared to be less inflammatory reaction, and recovery has been more rapid.\*

—The individual cases of labour in which ether has been successfully used have been so numerous that it is impossible to do more than refer to a few of them in a very cursory manner.

Dr. Prothero Smith has etherized in two cases of placenta prævia, in a case of turning, and in a natural case.† A case of turning has been recorded by Mr. Gordon,‡ and another by Mr. Pickess.§ In America, cases of forceps and craniotomy have been reported by Dr. Channing.|| These, with numerous other cases which need not be particularized, appear still further to warrant the opinion we formerly gave of the merits or at least of the innocuity of the agent in midwifery practice.

40. *Puerperal State—Puerperal Fever.*—Two cases of this disease are mentioned by Mr. Clark, of Colchester, which afford additional evidence of the facts we have been anxious to impress upon the minds of our readers, viz. its erysipelatous nature, and its communicability. The remarks of Mr. Clark upon the cases are worthy of the importance of the subject. He enlarges more particularly upon the importance of acknowledging several forms of this disease, and carefully distinguishing this, the contagious and fatal form, from those which are truly inflammatory. He also points out the inefficiency of all treatment, and the apparent origin of the cases in question from a case of phlegmonous erysipelas which he was attending at the time he was called to the first patient.¶

41. *Puerperal Mania.*—Mr. Salter narrates the case of a lady in whom it was necessary to induce premature labour on three different occasions, for aberration of mind during gestation.\*\*

42. *Vesico-vaginal Fistula.*—Professor Pancoast, of the Jefferson Medical College, has devised a new operation for this distressing accident, which consists in attaching the two sides of the abnormal opening firmly together, on the principle of the tongue and groove, so as to get four raw surfaces into contact, and thus increases the chances of union by first intention. The operation is thus conducted:—

Having exposed the orifice by a Charrière's speculum, from which the sliding blade is removed, the first object is to split up the posterior margin of the fistula to the depth of half an inch, with a sharp-pointed bistoury; the edges of the other lip are then pared off, so as to bring it into a wedge shape, first reverting it with a blunt hook, and trimming off the vesical mucous membrane with the curved scissors, and then detaching the vaginal mucous membrane in like manner, to the breadth of three quarters of an inch, along the whole extent of the lip. This is a difficult but important part of the process. The next object is to insert the raw wedge or tongue into the groove of the opposite lip of the fistula, and to retain them in apposition. This is accomplished by a peculiar suture, which the operator calls the "plastic." The threads are passed with short, sharply-curved needles; a fine catheter is then passed, and cold applied to the vulva to moderate reaction. Subsequently sulphate-of-zinc injections are used.††

—A case is related by Professor Emmert, of Berne, in which he succeeded in inducing union of the edges of the fistula by touching them with pure creasote.‡‡

\* Gazette Méd., Oct. 2 and 9, 1847.

† Lancet, July 31, 1847.

‡ Ibid., July 17.

§ Prov. Med. and Surg. Journal, Sept. 23.

|| Boston Med. and Surg. Journal.

¶ Med. Gaz., Aug. 20, 1847.

\*\* Amer. Journ. of Med. Science, and Dublin Med. Press, Oct. 10.

†† Philadelph. Med. Examiner, May 1847.

‡‡ Journ. für Chir. und Augen-Heilkunde, 1847.

43. *Midwifery Statistics*.—In addition to the statistical records given in a former Volume, we record the following:—

—*Statistics of the Wursburg Hospital*.—Total number of labours, 637; 651 children born; 602 living, 49 dead; twins, 31 times. The presentations were—

Head . . . . .	613
Pelvis . . . . .	18
Face . . . . .	10
Cross . . . . .	3
Unknown . . . . .	7
	<hr/>
	651

—*Statistics by Dr. Bliss*.—These statistics embrace 820 cases of delivery; of these 815 were born in the following months:

January . . . . .	52	July . . . . .	65
February . . . . .	63	August . . . . .	81
March . . . . .	74	September . . . . .	75
April . . . . .	57	October . . . . .	80
May . . . . .	62	November . . . . .	72
June . . . . .	71	December . . . . .	63

The sex of 797 children has been noted. Of these 395 were males, 402 females.

Of 771 deliveries, the presentations were as follows:

Natural . . . . .	738
Breech . . . . .	15
Funis . . . . .	1
Foot . . . . .	8
Face . . . . .	8
Arm and abdomen . . . . .	1

Of 820 cases 40 were premature, 21 were stillborn. The cord was twisted once or more times round the neck in 155 cases, or once in 5 cases.

The average duration of labour was  $10\frac{1}{4}$  hours. Out of the whole number three were instrumental cases. Four cases were preceded by puerperal convulsions; each was a primipara.

Placenta presentation occurred in *three* instances, or once in 273 cases. Two out of the three died; in all turning was practised. One child was born alive.\*

—The following statistical records of the Royal Maternity Charity are given by Dr. Lewis:

Total number of cases 20,000.

Living . . . . .	19,443	Boys . . . . .	10,422
Stillborn . . . . .	820	Girls . . . . .	9,841
	<hr/>		<hr/>
	20,000		20,000

Presentations.

Head . . . . .	19,468	or one in	1 nearly.
Face . . . . .	153	"	131
Arm . . . . .	65	"	312
Breech . . . . .	357	"	56
Feet . . . . .	179	"	112
Placenta . . . . .	10	"	2000
Funis . . . . .	31	"	666

Twins occurred once in 76 times.

Instruments were necessary once in 400 labours.

Hemorrhage occurred in 106, or once in 189 cases.

Placenta adherent in 60, or once in 333 cases †

\* New York Journ. of Med., Jan. 1847.

† Med. Times, Sept. 4.



§ III.—*Diseases of Children.*

The diseases of infancy and childhood have hitherto been much neglected in this country, as far at least as public means of instruction connected with them are concerned, and it is therefore with much gratification that we observe from the admirable lectures of Drs. West and Wilshire, now in course of publication in the "Medical Gazette" and "Medical Times" respectively, that class of ailments will in future obtain an amount of attention commensurate with their importance. Although it is not our habit in general to occupy the pages of the "Half-Yearly Abstract" with elementary lectures, we have departed from our rule in favour of the above courses, believing them to contain matter with which the profession at large in this country is far from being so familiar with as it ought to be. (See Arts. 97, 98). In our next volume we shall continue the series.

44. *Diseases of the Fetus—Monstrosities.*—Mr. West has published the following details of a case of monstrosity, which caused him much difficulty during labour.

"The appearance presented by it was that of two perfectly formed and well-developed female children united from the umbilicus to the necks. They weighed, without the enormous liver and those portions of the intestines which were torn away, 11½ lbs. avoirdupois; and estimating the weight of the parts removed, and of the blood that was lost, at a pound and three quarters, I think we may safely assume that they would have weighed, if entire, 13 lbs., which is two pounds more than the average weight of twins according to Burns. The union at the top was formed by a common sternum, or rather by the clavicular extremities of two sterna united end to end, and passing nearly straight across. This double sternum was very short, and would, if removed, have presented the appearance of a nearly square piece of bone with a clavicle at each of the four corners. A kind of raphé could be felt at the point where the bits of sternum joined each other. Below the sternum on both sides, the true ribs were united by short pieces of cartilage which ran straight across from the ribs of one child to the corresponding ribs of the other. The cartilages of the false ribs turned upwards, and were attached to the under part of the cartilages of the lowest two ribs.

"The liver having been cut nearly in two, and torn away along with nearly all the intestines, it was impossible to ascertain the relative position of the parts in that portion of the abdominal cavity in which the sac of the peritoneum was common to both fœtuses. I have said there was but one umbilical cord, and as that was not at all thicker than the average, I imagined it possible that the children might each supply only one umbilical artery; but on examining the iliacs in one of them, I found that each iliac sent off its artery in the usual way. The aorta of the other fœtus, having been cut in two in the situation where the blunt hook had divided the spine, had been torn away along with both kidneys; but there could be no doubt that this child supplied two umbilical arteries as well as the other. The cord must therefore have contained four umbilical arteries; but for various reasons, which will be more apparent when I come to the description of the heart, I think it probable that there was but one umbilical vein. I regret that when I was searching into these matters the day after the delivery, the whole of the funis, as well as the placenta, had been made away with by the nurse.

"Attached to the under part of the raphé of the common sternum, which formed a kind of roof to the two chests, was a membranous bag extending across from side to side, and down to the diaphragm. On cutting into this, I found it was a pericardium containing a curiously-shaped heart, common to both fœtuses. Passing the finger along the top of this heart, I found that its only attachments were at each side, the middle part for the space of about two inches being free. Flat and shaped like a kidney, it seemed to lie evenly between the two chests; but by stretching it downwards it assumed some obliquity which I found was occasioned by the circumstance that each upper corner of the heart was connected with the right side of each fœtus. Each child had a complete pair of lungs, three lobes on each right side, and two on each left, the mediastina extending backwards from the centre of the common pericardium. Two thymus glands were attached to the under part of the sternum, separated from one another by the pericardium. Each fœtus had two kidneys, and the pelvic viscera in both were perfect and well-

developed. Although the liver was much torn and nearly cut in two, I was yet enabled to make out distinctly that it was a large one, common to both children. I could not find any gall-bladders, but probably there would be two; at any rate there must have been two ducts, one for each duodenum. The diaphragm was torn to shreds.

"I have said that as the heart hung loosely in its pericardium, it was placed evenly between each thorax, and that it was attached to the right side of each fœtus. This circumstance was rather puzzling at first: for it has an aorta at each upper corner, rising from a kind of ventricle immediately underneath it, so that the systemic ventricle of each individual would be in fact a *right* ventricle, and not a left one with reference to the fœtus to which it belonged. But the fact is that, in the natural state of things, the aorta arises on the *right* side of the heart, to the *right* of the pulmonary artery, on the *right* side of the thorax, and passes across the spine to the left side; and that, notwithstanding its ventricle lies somewhat to the left, but more behind the heart. Therefore, as the aorta must arise on the right side, it seemed a kind of necessity that, constructed as the heart about to be described is, each systemic ventricle should be situated on the right side of the fœtus to which it belonged.

"So much for position. The heart itself is shaped like a kidney, and weighs exactly one ounce avoirdupois. On external examination it is found to possess the following peculiarities: one enormously large auricular sinus, having two openings into it at one corner, supposed to be the openings for a common superior and inferior vena cava, with five auricular appendages, one very large under the openings for the cavæ, two at the other corner, looking like another large one split in two, and two smaller ones near to each other, hanging down on the other front of the heart between the roots of the two aortæ—all these appendages communicating internally with the large auricular sinus. An aorta at each side of the heart, and a single pulmonary artery having its root near, and passing under, that aorta which is situated nearest the openings for the cavæ. These three vessels are all furnished with semilunar valves. No traces of pulmonary veins can be found.

An incision along the top of the auricular sinus, and down one front of the heart into the middle cavity, exposes nearly the whole internal structure. In the middle of the floor of the auricle is a large opening into a kind of ventricle. Round this opening four valves, of the kind called *tricuspid* or *mitral*, but not properly called either in this instance, hang down into the ventricle. A director passed into the pulmonary artery enters this ventricle, under the valve numbered (2) in the sketches. The valve numbered (4) is tied down by its columnæ carneæ to a thick muscular septum ventriculorum. The valve numbered (3) is tied down to another set of columnæ carneæ, which form the only division between the middle ventricle and the systemic ventricle on that side—the two ventricles communicating freely with each other between these muscular columns. A large rounded hole is found in the upper part of the septum, lying between the middle ventricle and the other systemic ventricle. This hole is under the valves numbered (1) and (4), and through it there is a free communication between these two ventricles. Thus it seems that, in point of fact, all these three ventricles are as one. The two systemic ventricles, on being cut into, are found to have no communications with anything but with the middle ventricle in the way just described, and each with its aorta. No traces of mitral valves can be found in either of them, and they are not needed, for their proper auricles are equally wanting; and the most careful search can detect nothing like pulmonary veins, though I am inclined to suspect that the openings marked (1) in figure 5, which terminate in a small cul-de-sac in the muscular wall of the heart, are abortive ones.

"Thus this heart may be said to consist of but one auricle for the admission of blood, and one ventricle for its expulsion by means of three arteries. It is evident, therefore, that though it might do very well to support fœtal life, even for both children, it could not have supported extra-uterine life for more than a few minutes. The blood might be sent by the common pulmonary artery to both sets of lungs, but it could not come back again. If the septa between the ventricles had remained incomplete, black blood would have been sent out by each aorta to the general system, as well as by the pulmonary artery: and if by any means the septa had been made complete, as in the case of the closure of the foramen ovale

in the perfect fetal heart, the systemic ventricles would have been useless, as they could not have been filled.\*

—A paper on monsters, with eventrations, by Mr. Hallet, will be found in the "Edinburgh Medical and Surgical Journal," and an account of the dissection of two anencephalous monsters, by Mr. Poland, in the last volume of "Guy's Hospital Reports." These papers are too purely anatomical for this Report.

45. *On Blood-letting from the Jugular Vein in the Diseases of Children.*—The object of the present communication is to show the great advantage of selecting the external jugular from which to draw blood in diseases of young children, instead of the veins of the arm or temporal artery. The author observes :

"I would make this operation the rule instead of the exception in many of the acute affections of children under two or three years of age, and also in older subjects, in certain diseases of the brain and trachea. As the head in infancy is larger in proportion to the size of the body than in the adult, so also is the cerebral vascular system more developed, and hence we find the jugulars relatively larger and more prominent in the first years of life. But in what, let us inquire, consists the advantage of opening the jugular, in the diseases of children, over the more general operation of venesection in the arm? In the first place, let me endeavour to prove that this operation is practically more simple, safer, and also more efficacious in the arrest of certain acute diseases. It is more simple, inasmuch as the external jugular in a child is at least double the size of the veins of the arm, and consequently much more easily found and opened. It is more simple, on account of the more rapid flow of blood from this vein; and also in dispensing with a part of the usual apparatus for bleeding in the arm. The practitioner is often baffled in the attempt to bleed from the arm. These difficulties are very seldom found in letting blood from the jugular."

It has been objected, that in operations upon the jugular there is danger of sudden death from admission of air. This objection the author conceives to be purely imaginary, if the operation be properly performed. It is true that in extirpation of tumours low down in the neck, where the jugulars have been completely cut across, and from the presence of hardened tissue could not collapse, air has been drawn into their open orifices in expanding the chest, and death has followed almost instantly. Again, in operating upon the cicatrix of a burn in the neck, the danger from admission of air is very urgent, simply because the firm tissue through which the vein passes will effectually prevent its open orifice from collapsing by atmospheric pressure. So far as the author is aware, there is no case on record of death from admission of air resulting from simple puncture of the external jugular in venesection. Nor does he believe such a result possible in a healthy state of the parts, if the operation be properly performed. To render the measure perfectly safe, let the pressure be applied at the point where the vein passes the first rib; let the vein be opened midway between the clavicle and angle of the jaw, and let the compress be applied to the orifice before the pressure is taken off the vein below.

The safety of the operation may, he states, be inferred from the fact, that the jugular is almost invariably selected in letting blood from the lower animals; and although the operation is often done in the most unskilful manner, yet injurious consequences very seldom follow.

In simple inflammations, the danger of phlebitis need not be taken into the account in this or other operations on veins; but in typhoid, or malignant disease, the jugular, from its size and position, had better be avoided. In such cases, however, general bleeding is seldom required.

Among the diseases in which the author advises bleeding from the jugular, we may mention inflammation of the larynx and trachea; inflammation of the membranes and substance of the brain; and congestion of the cerebral organs, accompanying or preceding convulsions.

Here blood is taken so nearly from the seat of disease, that the operation appears to have the effect of topical and general depletion combined, and hence its prompt and very decided salutary influence.

He also much prefers letting blood from the jugular in the acute inflammations

\* Edinb. Med. and Surg. Journal, Oct. 1847.



of the thoracic viscera in young children. One of the chief advantages of the operation is the great rapidity with which blood flows from a free orifice in this vein. A decided impression can thus be made upon the system in a very few moments, and with much less loss of blood than would be required to produce the same effect from a vein in the arm, or by the still slower process of leeching or cupping.

Conceiving that the mode of opening the jugular is not satisfactorily described in books, the author gives the following directions for performing the operation :

The nurse having exposed the right shoulder of the child, and secured the clothing from the flow of blood, seats herself upon a low chair, and in holding the child across her knees, carefully confines the arms. The surgeon, seated at her side, receives and secures the child's head between his knees. With the thumb of the left hand he now compresses the jugular where it crosses the first rib; while the remaining part of the same hand is employed in fixing the chest of the child against the person of the nurse. The right hand of the operator being at liberty, he makes a free opening into the vein with whatever form of lancet he is accustomed to use. The blood is received in a cup, the edge of which applied a little below the orifice, likewise serves to compress the vein. From a robust child blood escapes with astonishing rapidity, particularly when the child cries or struggles. No effort should, therefore, be made to quiet the patient. His cries should rather be encouraged, as they expedite very much the operation. A sufficient quantity of blood is very soon lost, to produce the constitutional effect required. The colour of the lips and cheeks of the child will tell the surgeon when syncope approaches much more certainly than will his finger upon the pulse. The quantity of blood desired having been lost, a compress is applied to the orifice, and the pressure taken off the vein below. After the child becomes quiet, the compress is removed, and the wound closed by a piece of court or adhesive plaster, which the physician should always carry with him for the purpose. This is much the best dressing. The bandage and compress usually advised is very objectionable. It not only obstructs the free return of blood from the head, but its presence irritates the patient, and if not well adjusted may promote the flow of blood or interfere with respiration. If, however, all pressure be removed from the vein below, blood will not escape if no dressing be applied, except the child cry or struggle. We, therefore, much prefer, if the proper dressing be not convenient, to leave the orifice uncovered, and direct the nurse to apply the compress for a moment, should blood escape during the cries of the child."

Here, perhaps, it may be asked at how early an age is general depletion justifiable in a child? To this the author replies that the age of the patient should not be taken into the account, but simply the violence and locality of the inflammation. A few leeches are equivalent to general depletion in very young subjects; and in inflammations of mucous membranes in general, and abdominal viscera in particular, are no doubt much to be preferred to the use of the lancet. But in open, clearly-marked, acute inflammations of the brain and membranes, lungs, and pleura, and trachea, accompanied by high fever, he much prefers the bold and rapid abstraction of blood from the jugular, whatever may be the age of the child. And he is well convinced that less blood will be required to produce the necessary effect in these diseases, than if drawn by leeches. In illustration of his proposition, the author adduces cases of hydrocephalus and croup.\*

[We agree with the author that the danger of opening the jugular, as far as regards the admission of air, is altogether imaginary; but we differ from him in toto as to the advisability of the operation in the general inflammatory diseases of childhood; we have seen more children lost from the *nimia medici diligentia* in this matter, than from the omission of blood-letting. The reader must recollect that the writer is living in a country the practice of which is still much influenced by the sanguinary precepts of Rush.]

46. *Fatal Hemorrhage from the Umbilical Cord three days after Birth.*—Dr. Keiller stated to the Edinburgh Obstetrical Society that he had been called to examine a case of fatal umbilical hemorrhage. It occurred in a fine, plump, male child,

\* Amer. Journ. of Med. Sciences, April 1847.

which was affected with vomiting from time to time. On the third day, it was discovered that the binder, &c., of the child were soaked with blood from the navel. The cord was not examined for two or three days afterwards, when it was found that the bleeding point was at the root of the cord, to which was applied nitrate of silver, which seemed, at the time, to be sufficient to prevent the further continuance of the hemorrhage. Before half an hour had elapsed, however, the medical attendant was again summoned, when he tied a ligature around the umbilicus, embracing a portion of the skin which formed its circumference. The treatment proved too late, for the child died in a few minutes after the application of the ligature.

47. *Scleroma of the Cellular Tissue in Newborn Children.*—Dr. Eman Mildner, of Prague, observes that the disease attacks many children who have been treated, when in a state of asphyxia, successively by tepid and cold affusions; its greater frequency during cold or humid cold seasons; its sudden occurrence in many newborn infants, who, after warm bathing, were exposed incautiously to cold; and its presence in children born in the street, and during the first days of life, are facts which indicate the great influence of a change in temperature in producing this disease. In the treatment, great care must be taken to prevent the disease, by avoiding, as far as possible, exposure of the child to any change of temperature. In foot and breech presentations, the parts which first appear should be carefully covered with warm clothes. The employment of cold affusion after tepid baths, for the revival of asphyxiated children, should be restricted to very rare cases. In the first degree, the most successful treatment consists of warm, dry, and aromatic fomentations; friction with flannel sprinkled over with camphor; tepid baths and diaphoretics. In the second degree, treatment is seldom beneficial; cold affusion is suggested at first, and then, having dried the parts, to cover them with flannel, and to employ the same means as in the first degree. Post-mortem examinations yield satisfactory proof that morbid alterations of deep-seated organs are not connected with the origin of sclerosis, as there are many cases in which no changes but those in the skin can be discovered; that, when such alterations have been found, they, in most cases, are in no way related to the integumentary disease; that their presence, notwithstanding, considerably influences the progress of the case.

48. *Ophthalmia Neonatorum.*—Mr. Whitehead, in his work before mentioned, as well as in a paper in the "Provincial Journal," alludes to the frequent origin of this disease from inoculation with the secretion from ulcerations of the uterus unconnected with gonorrhœa, and alleges this as an additional reason for curing these lesions prior to delivery. In the treatment of the ophthalmia he prefers Mr. Walker's plan of pencilling the inner surface of the lower eyelid with solid caustic.\*

—Dr. Eschrich states, that in the ophthalmia of new-born infants, he has always effected a perfect cure in shorter time than usual (one week), by surrounding the eye or eyes with a thick layer of mercurial ointment. Mr. Wilde states that he should be sorry to trust a severe case of this disease to this remedy, and the Munich physician acknowledges in his paper that, in addition to the mercurial inunction, he uses frequent injections of tepid water, and when the swelling and discharge have lessened, he employs a weak caustic solution. Professor Von Ammon recommends a lotion of six grains of extract of belladonna and ten drops of lime-water, to four ounces of distilled water; with this the eyes are to be steeped every half hour, and in the interim, a bandage wet with the solution is to be applied over the eyes. His object in using the belladonna is to allay the spasm of the eyelids, and by facilitating the matter, to allay the swelling of the conjunctiva and cornea. This certainly is not heroic practice, and few practitioners in this country would trust a patient to it alone. Having constantly remarked an extensive state of ulceration in the conjunctiva of the upper lid in the severe forms of this disease, Mr. Wilde now generally everts the lid, to examine its inner surface, as soon as a case presents itself, and has several times succeeded in cutting short the disease, by at once applying a strong solution of nitrate of silver to this part alone. He begs to call the attention of ophthalmic surgeons to this subject.†

\* Oct. 6, 1847.

† Mr. Wilde's Report, Dublin Journ., Feb. 1847.

—M. Chaisaignac affirms that he has discovered the presence of a thin false membrane on the surface of the sclerotic and eyelids, which aggravates the disease by acting as a foreign body, and prevents the application of remedies. He removes this with forceps, and then relies upon repeated and forcible douches of cold water to the conjunctiva\*.

49. *Croup, Solution of Nitrate of Silver to the Larynx in.*—In our Report on Practice of Medicine in the present volume, we have given an account of Dr. Green's success in the laryngeal affections of the adult, by cauterizing the larynx with a solution of nitrate of silver. Dr. Blakeman, of New York, has adopted the same plan with advantage in croup, and records the following two cases:

The first case was a child, *æt.* 2, large and fat. He was seen five hours after the commencement of the attack, with a hot dry skin, quick pulse, laborious croupy respiration; free vomiting and purging produced no relief. Dr. Blakeman, therefore, used a solution of argenti nitras ( $\mathfrak{zj}$  to  $\mathfrak{Zj}$ ) by means of a sponge. The first application brought away a quantity of tenacious matter. A second application, in ten minutes, brought a still greater quantity away. A third application was made, in five hours, with increased advantage, and next day the child was convalescent. In the second case, two applications were sufficient.†

—Dr. Latour used the solid nitrate, in a case of croup, to all the parts within reach. He afterwards applied a solution, by a piece of lint between forceps, and contrived, by squeezing it, to cause some of the fluid to pass into the larynx; the child recovered.‡

—Dr. Meigs also approves of caustic to the fauces, as may be seen by a reference to Art. 99.

50. *Pertussis.*—Dr. Duncan insists upon the propriety of regarding whooping-cough as an exanthematous disease, and asserts that it exhibits all the more constant characters of that class of diseases. The essence of the disease he conceives to be “a turgescence of the bronchial glands coinciding with, or arising from a peculiar fever, and the result of a specific poison.” Dr. Duncan appears to think that he is original in the theory of the exanthematic origin of whooping-cough: but in this he is in error. The same extraordinary doctrine was, some time since, broached by Volz (*Häser's Archiv*, *bd.* iv., *hft.* 3). The idea at that time appeared to us too hypothetical for notice, or we should not have passed it over.

The explanation of the influence of the bronchial glands in the production of the disease is the same as that given by Dr. Ley to account for the paroxysms of laryngismus, viz. a reflex action caused by irritation of the pneumogastric nerves. Dr. Duncan gets over the difficulty of the paroxysmal character of the symptoms by assuming that the turgescence of the bronchial glands is intermittent. Dr. Duncan admits his opinion to be only hypothesis, and such we conceive it will be esteemed by our reader.§

—Two papers have also lately appeared in the “*Provincial Medical and Surgical Journal*,” with the object of explaining the pathology and treatment of pertussis.

—Dr. Fife looks upon it as a neurosis, and altogether distinct from bronchitis, and affirms, moreover, that the two diseases cannot co-exist; in proof of which he institutes the following comparison between the two diseases:—

“Pertussis is essentially a disease peculiar to infancy and childhood.” [This is not strictly correct; we have known three or four well marked instances in the adult.] Bronchitis occurs indiscriminately at all periods of life.

“The cough in pertussis, is spasmodic or convulsive, always occurs in paroxysms, and frequently assumes a periodical type. In bronchitis it is casual, and, though frequent and severe, rarely induces vomiting.

“In pertussis the patient is commonly well during the intervals; in bronchitis there is no intermission, though there may be a remission in the symptoms.

“Pertussis almost invariably occurs as an epidemic, with bronchitis this is exceptional.

“Pertussis is unattended with fever; bronchitis in its mildest form presents febrile disturbance.

\* *Bullet. des Acad.*, Aug. 23. *Gaz. Méd.*, Sept. 4.

† *New York Med. and Surg. Reporter*, and *Month. Journal*, Oct. 1847.

‡ *Gazette Méd.*, Aug. and October.

§ *Dublin Quart. Journ.*, Aug., 1847.



"The cough in bronchitis is not attended by the whoop; whilst in pertussis this symptom is pathognomonic, and is lost as soon as inflammation of the bronchial tubes actually sets in. Finally, the treatment of bronchitis has little if any effect in whooping-cough."

In the treatment of pertussis Dr. Fife deprecates depletion, unless active inflammation be present. Internally he relies upon full emetics, aided by alkalies and cochineal. He also speaks favourably of sedative liniments to the chest and spine.\*

—In an essay by Dr. Ogier Ward, which appears in a subsequent number of the same journal, some of the preceding opinions are criticised. The author objects, *in limine*, to the exclusive view of the neurotic character of the disease as one unsafe in practice. He then examines, *seriatim*, the six propositions which we have recapitulated, and furnishes us with his own pathological opinions. In his observations upon Dr. Fife's propositions we do not see any remarks to detain.

In detailing his own views of the pathology of whooping-cough, the author proceeds to describe it "as a zymotic disease affecting primarily the mucous membrane of the air-tubes and the blood, and secondly, the medulla oblongata and respiratory nerves, producing a violent and convulsive cough," &c. He concludes that the first stage consists in irritation of the air-passages, which, producing an increased secretion of mucus, excites the cough. To explain the "whoop," the peculiar feature of the second stage, he recapitulates the well-known excito-motory physiology of the larynx, and proceeds as follows:—

That congestion or irritation of the medulla oblongata is sufficient to produce the spasmodic contraction of the glottis which causes the whoop, we have strong confirmation in the source of the crowing respiration; but we derive still stronger arguments in favour of this view, from the consideration of many of the exciting causes of the paroxysm of whooping-cough, the influence of which is to be explained by their effect in inducing such a state of the medulla. Thus all violent and sudden emotions, and their expressions, as laughing, shouting, &c., disturb the action of the heart, which either directly, or by reaction, expels the blood towards the head with greater force, and thus immediately excites the cough. Again, during sleep there is a tendency to congestion of the brain independently of the horizontal posture, which also augments it, and hence the cough is troublesome at night. It may be objected that similar causes will provoke an access of cough in other catarrhal affections, and especially in asthma; but admitting this to be the case, I contend that the cough is not so easily excited, nor is it so violent in ordinary catarrhs as in pertussis, and the exception of asthma favours rather than opposes this view, as there is always a greater or less amount of cerebral congestion in the nervous form of that disease.

The prolongation of the paroxysms of coughing after the first series of expulsive efforts, and the consequent whoop, have terminated, is to be explained by the persistence of some irritation, either of mucus in the bronchi, or of food in the stomach, for when these have been emptied of their contents, the paroxysm terminates. The consideration of this symptom of vomiting has hitherto been omitted, because it is neither peculiar to whooping-cough, nor invariably present, and because it is more or less an attendant upon all severe fits of coughing, from whatever cause, in many persons. Indeed, when we reflect upon the numerous sympathies of the stomach, besides its own affections, that may induce vomiting, it is almost impossible to fix upon any one sole cause of the symptom in whooping-cough; for instance, the vomiting may be the effect of the mechanical compression of the parietes of the stomach by the efforts of coughing, which also overcome the resistance of the other sphincters; or it may arise from the irritation of the larynx and bronchi, by the mucus being transmitted to the stomach, as occurs when the fauces and larynx are tickled by a feather; or from a similar transmission of the specific irritation by means of the par vagum to the stomach; or it may be the result of congestion of the brain by the cough, either simple or specific, producing its usual effect of vertigo and sickness. On these grounds the solution of this question may be fairly left for future discoveries. At present our view of

\* Prov. Med. and Surg. Journal, June 16, 1847.

the pathology of the cough is not rendered clearer, whichever we may adopt as being the cause of the vomiting that occasionally attends it.

From what has been stated, we may briefly recapitulate the series of events that constitute the pathology of pertussis in the following order of sequence: Specific toxication of the blood, inducing irritation of the bronchi and increased secretion of mucus, and consequent congestion of the lungs; toxication, and congestion of the brain and medulla oblongata by the blood, now rendered still more vitiated by the pulmonary congestion, which, producing specific irritation of the respiratory nerves, renders them more easily affected by slight stimuli, and causes irregular contractions of the muscles, under their influence, so as to produce a spasmodic cough of a peculiar kind.

Dr. Ogier Ward agrees with Dr. Fife in the main as to treatment, but he has recourse to leeches when the features are puffy, the eyes blood-hot, and there is general oppression with mucous râles in the lungs. He also mentions the importance of changing the position of the child during sleep, to prevent any sanguineous stasis in any portion of the lungs.\*

51. *Deformity of the Chest in Children*—This subject has been recently discussed in the London Medical Society. Mr. Hird related one of the cases of this deformity which he has seen. It occurred in a little girl now seven years of age. He attended her at the age of six months, when she was suffering from extreme difficulty of breathing, which obliged her to let go the nipple when sucking; the tonsils were found much enlarged, and a portion of them was removed, with much relief to the breathing at that time. He had been attending her again lately. She had cough, and a slow, irregular pulse. The abdomen was tumid; the sternum prominent; and there was a projection of the spine backwards about its centre. There was a depression on each side of the chest at the union of the ribs with the cartilages, and a sinking in of the chest at the sides during each inspiration. The tonsils were much enlarged, and he had always found them so when this particular deformity was in existence. Baron Dupuytren, who had written on this deformity, had noticed the enlargement of the tonsils in connection with it; and he had recommended a peculiar mechanical treatment for it, part of which consisted in the application of pressure by the nurse on the sternum during expiration, and withdrawn during inspiration. He (Mr. Hird) had found this treatment of service.

Dr. Snow said that this kind of deformity had been noticed by writers in this country as well as by Dupuytren; and he (Dr. Snow) had read a paper on it to that Society several years ago. The cases which he then related depended, however, on enlargement of the abdomen: but he had at that time explained how it might be occasioned by enlargement of the tonsils, when it was so great as to impede the ingress of air to the lungs. Whilst the diaphragm, by its contraction, tended to enlarge the capacity of the chest, the air, unable to enter and distend the lungs, forced inwards by its pressure the still delicate and flexible sides of the thorax of the child.

Dr. Murphy considers that this kind of deformity depended on scrofulous disease, which interfered with the growth of the bones of the chest; and that although enlargement of the tonsils, disease of the lungs, or other causes, might assist in its production, they could not of themselves occasion it. In the infant the abdomen was large in proportion to the chest; and if, from scrofulous disease, the chest did not grow properly, these infantile proportions would be preserved; the belly, getting larger, would cause the sternum to project, and the sides of the chest to be flattened; and if there was obstruction to the ingress of air from enlarged tonsils, or any other cause, the atmospheric pressure might press on the flattened sides of the chest.

Mr. Streeter considered that the walls of cavities were influenced in their shape by the contained organs, and not by external causes; and that the form of the chest would depend on that of the lungs and heart, as the skull does on that of the brain.†

\* Prov. Med. and Surg. Journ., Oct. 20, 1847.

† Reported in Lancet, May 1, 1847.

## IV.

# REPORT ON THE PROGRESS OF ANATOMY AND PHYSIOLOGY.

### § I.—Osteology.

1. *Archetype of the Vertebrate Skeleton*.—Subsequently to the date of our last Report, anatomical science has been advanced by the first complete sketch of the ideal skeleton, founded by the philosophy of Oken, raised by the researches of him and other anatomists, and now perfected by the profound knowledge and rare powers of combination of Professor Owen.\* According to this view, the vertebrate skeleton consists of a series of transverse segments, which together make up the axis and the protecting canals of the nervous and vascular trunks, and each in its typical completeness supports a diverging appendage. Greatly modified as the archetype may become, every segment preserves relations so striking, that it is unnecessary almost to retrace the steps of mutation, in order to perceive even in the skull of man, where the modification of the type is greatest, the adherence to this natural law. It would exceed the limits, and trespass on the province of this Report, to enter at large into the interesting argument for the adoption of a general idea as the assumed design of the skeleton; indeed, unity of organization must have an import in anatomy similar to that of grammar in language, for as the one without rules is but a vocabulary, so the other without laws can be only nomenclature.

Such a segment of the skeleton as the above, consists of the axis or "*centrum*,"† of pieces which together compose the canal which lodges the nervous trunk, viz., two "*neurapophyses*" and a "*neural spine*;" of pieces defending the vascular trunks, viz., two "*hæmapophyses*" and a "*hæmal spine*;" further, of two "*diapophyses*" and two "*parapophyses*," which are transverse processes (upper and lower) of the centrum, and two "*pleurapophyses*," or ribs. There are besides exogenous processes from both neur- and hæm-apophyses anterior and posterior to them; these are "*zygapophyses*," or articulating processes.

It is the aim of this philosophical anatomy to place all the bones of the skeleton under that head in the above category, to which it appears to be most naturally allied; this is attended with considerable difficulty even in the trunk vertebræ, but in the cranium, where great expansion, and, to the eye, confusion of elements has taken place, it is rendered next to impossible to arrive at determinations which may not be challenged. The type assumed is at best only that which appears to include most completely the various elements which unquestionably do hold precise and unvarying relations, and we may safely adopt that arrangement which has been some time produced by Professor Owen, and which has stood the test of strict examination. We agree with him, "that the osteology of man cannot be fully or rightly understood until the type, of which it is a modification, is known, and the first step to this knowledge consists in the determination of the vertebral segments, or natural groups of bones, of which the myelencephalous skeleton consists."‡

2. *Modification of the Archetype of the Human Skeleton*.§—In the trunk the seg-

\* Report of British Association, 1846, and Lecture on Fishes, 1847.

† For the excellent reasons which Professor Owen has assigned for the use of new names, we refer to the Report, p. 1, &c.

‡ Mr. MacIise has published a work on the Archetype Skeleton, which we have not had the advantage of perusing.

§ Vide Report, l. c.



ments are all distinct in the axis until the sacrum, when, in addition to the anchylosis which in all the previous segments joined the centrum to the neurapophyses, &c., the centre of five distinct segments blend together. It has lately been shown by Professor Owen,\* that the atlas is peculiarly modified as to its centrum, in all mammals, birds, and reptiles, except batrachia; the medullary portion of the notochord is only ossified so far as the atlas, and even there what properly belongs to that segment, is retracted and becomes anchylosed, or (in reptiles) immovably united, to the succeeding segment, forming thus the odontoid process of the second vertebra of the neck. That portion of the atlas which is generally named body, is then only an autogenous ossification of the capsule of the notochord; it is, however, the immediate homologue of the existing centurms. of the cranial vertebræ in these higher animals. The cranial segments are four in number, and their axes are from behind forwards:—1st. *Basi-occipital*. 2d. *Basi-sphenoid*. 3d. *Basi-presphenoid*. 4th. *Vomer*. Of these, the 4th alone preserves its distinctness, but the other three are anchylosed to one another, and to their neurapophyses.

The *neurapophyses*, "*laminae*," of all the trunk vertebræ are anchylosed to their centrum and to their spine; those of the first cranial segment are the "*exoccipitals*," and bear the condyles; they are distinct only in the fetal age: the second pair are the "*alisphenoids*;" the third pair the "*orbito-sphenoids*" (processes of Ingrassias); and the fourth are the "*prefrontals*" (cribriform plates of the ethmoid). The law which the neurapophysis obeys, assigns it the office of protecting the side of the nervous cord, and more particularly guarding the exit of its particular nerve: therefore it is that the exoccipital is pierced by the ninth nerve, and helps to protect the eighth; that the ali-sphenoid is pierced by the fifth nerve; that the orbito-sphenoid in like manner protects the optic nerve, and that the prefrontal lodges the olfactory lobes, and is pierced by its numerous nerves. The *neural spines* of the cranial segments are:—1st. The supraoccipital. 2d. The parietal. 3d. The frontal. 4th. The nasal. They suffer great expansion, and are permanently or temporarily double, in consequence of the great development of the brain, which it is their office to protect. They gradually become depressed, and disappear in the last sacral and coccygeal vertebræ. Both *diapophyses* and *parapophyses* are present in the cervical vertebræ, and form with the anchylosed or immovably joined rudimental rib, *pleurapophysis*, the foramen for the vertebral artery. In the dorsal vertebræ, the parapophysis disappears, but the diapophysis enlarges, and to it the tubercle of the rib is united, whilst in the lumbar vertebræ this is anchylosed entirely to it, and projects laterally as the so-called transverse process. In the sacrum, transverse processes and ribs of the five vertebræ are blended in the thick lateral portions against which the ilia abut. The parapophyses of the cranial segments are:—1st. The *paroccipital*, which in the human cranium exist only at a very early period of ossification, and subsequently blend with the exoccipitals. 2d. The *mastoid*, which in mammals gains a very close connection with the special ossification of the capsule of the internal ear, but is perfectly distinct in its development. 3d. The *post frontal*, which appears in man only as the external orbital process of the frontal. 4th. Absent. *Pleurapophyses*, or ribs suitably elongated, curved, and attenuated in the thorax, are quite rudimental, and commonly anchylosed at both their junctions, by head and tubercle, with the cervical transverse processes, and are blended with the diapophyses in the lumbar region. The first sacral segment has a distinct pleurapophysis, namely, the *ilium*. The first cranial pleurapophysis is the *scapula*, which in mammals is removed from its proper segment. The 2d is the *stylophal*, reduced in the higher vertebrates to the slender styloid process of the temporal. 3d. The *tympanic*, exceedingly modified and reduced, forming the bony frame of the tympanic membrane. 4th. The *palatal*, which remarkably betrays its essential character in retaining a connection with the prefrontals by means of the *ossa plana ethmoidæ*. *Hæmapophyses* exist in the thorax as cartilaginous sternal ribs appended to the pleurapophyses, are wanting in the cervical, and only shadowed in the lumbar region by the transverse lines crossing the rectus abdominis. In the pelvis, the hæmapophysis of the first segment is the *pubis*; of the second, which is ossified, quite independently, is the *ischium*. The 1st cranial hæmapophysis is the *coracoid*. The 2d is

\* Annals and Mag. of Nat. Hist., Oct. 1847.

the *ceratohyal*, superior cornu of the hyoid. The 3d is the *mandibular*, or lower jaw. The 4th is the *superior maxillary*. *Hæmal spines*, exemplified in the sternum, are found in the three anterior cranial segments, viz. basi-hyal, premandibular and premaxillary. The following bones form a *diverging appendage* of the 4th, nasal, segment of the cranium in man, viz. the pterygoid, the malar, and the squamosal (squamous portion of the temporal). The bones of the anterior extremity, namely, humerus, radius and ulna, carpus, metacarpus and phalanges, constitute the *diverging appendage* of the occipital vertebra. Lastly, the bones of the posterior extremity, namely, femur, tibia and fibula, tarsus, metatarsus and phalanges, constitute the *diverging appendage* of the sacral vertebræ, more especially the first.

3. *Special Laws affecting the Individual Parts of the Skeleton*.—Not the least instructive part of Prof. Owen's Report is that where he seeks to define the characters of individual bones; thus we find some to be ever engaged in the protection of the organs of sense: of this number are the alisphenoid and mastoid. The conditions which appear to him most proper to the "*alisphenoid*" are:—1st, its connection below with the basisphenoid, and behind with the petrosal, where it forms the forepart of the otocrane or cavity for the reception of that osseous or cartilaginous capsule of the labyrinth or internal organ of hearing; the alisphenoid is also commonly, but not constantly, joined before with the orbitosphenoid, and above with the parietal; it has other less constant connections with the squamosal, the exoccipital, the supraoccipital, and the basioccipital; 2d, with regard to its essential functions, the alisphenoid protects more or less of the side of the mesencephalon, or (in mammalia) of the middle lobe of the hemisphere; "it gives exit, by notches or foramina, to the third, and usually also to the second divisions of the trigeminal or fifth pair of nerves." The fact of this bone having been confused with that proper to the labyrinth of the ear, makes it important to recognize the "*petrosal*" (*rocher* of Cuvier) under its essential character "immediately enveloping the whole of the vascular and nervous tunics of the labyrinth or internal organ of hearing, either in a membranous, a cartilaginous, or an osseous state, its histological condition being much less constant than that of the alisphenoid." The "*mastoid*" has a very constant relation to the acoustic chamber, contributing largely to its walls, and, in man, as well as most mammals and birds, becoming ankylosed to the petrosal; it has, besides, in mammals, sutural connection with the exoccipital, parietal, and squamosal; it is also grooved, notched, or perforated by the lateral venous sinus.

Again, it is extremely interesting to observe the law which has guided the author in his determination of the prefrontals in man, namely, that they are always the protectors of the rhinencephalic lobes; in the human cranium they are adapted to the position of the nasal passages, and gain a connection with the ossified capsule itself, whilst they are pierced by many holes in proportion to the surface requiring nervous influence.

4. *Atlas and Axis*.—Prof. Owen\* expresses his opinion, after comparisons of certain reptiles, and the ichthyosaurus, that the so-called body of the atlas is not its true centrum, that is to say, the medullary portion of the notochord ceases to become ossified, at the situation of the atlas, and the only representative of that medullary part proper to this vertebra, is ankylosed to the axis, constituting thus the odontoid process. The cortical part of the notochord, however, affects a distinct ossification to which the neural arches are joined; it is this autogenous ossification which forms the so-called body of the atlas; it is the homologue of the basioccipital, the basisphenoid, the basipresphenoid, and the vomer, which are similarly developed, ossifications of the cortical part of the notochord of the cranial vertebræ.

5. *Osseous Corpuscles*.—The researches of Mr. Quekett,† which led him to conclude that the bone-cells of vertebrate animals vary in magnitude as well as in form in the different classes of animals, and are therefore characteristic of the class to which they belong, have also suggested to him a correspondence in magnitude of the permanent bone-cell and the temporary blood-corpuscle; the siren, which is

\* Annals and Mag. of Nat. Hist., Oct. 1847.

† Transactions of the Microscopical Society, 1847.

known to possess a blood-disc of greater size than any other reptile, has also enormous bone-cells.

## § II.—*Myology.*

6. *Involuntary Movements.*—In an excellent paper, by M. T. Debrou,\* the involuntary movements which are effected by muscles of *animal* life, are admirably discussed. He points out that the will has but a feeble influence upon certain of the muscles belonging to this class, at least that others are placed under its dominance more entirely; and he proceeds to classify these exceptional muscles. In his first class he places “those movements, the involuntary execution of which is invariable, identical, and independent of circumstances of education,” for instance yawning, sneezing, vomiting, expectoration, &c., which are always performed in the same manner by the same individual, and by other persons; whilst experience is no aid to their better performance. In his other class are placed involuntary movements which have not the regularity of the former, and may result from a slow, continued practice of the will; they may be wanting in some individuals, and are not performed alike by all; for instance, shrinking movements for protection arising out of fear; instinctive movements of gesture and imitation.

1st Class.—Variety 1. *Movements of muscles associated with their congeners.*—Here are assembled, with reason, muscles meeting and interlaced at the median line, e. g., pharyngeal, palatal, laryngeal, and perineal, whose movement is never isolated; but besides these are included the elevators and depressors of the eye, and the internal and external intercostal muscles, whose action is essentially distinct, and certainly ought to fall under some law more definite.

2d variety. *Movements of muscles associated with antagonists.*—A striking instance of this is seen in the action of directing the eyes to an object right or left of the front, during which movement the external rectus of the one eye is associated with the internal of the other. M. Debrou is satisfied that this movement is not one learned by progressive voluntary directing influences.†

3d var. *Movements of suction, deglutition, micturition, and alvine evacuation.* &c.

4th var. *Respiratory movements*—both of free natural respiration, and difficult.

5th var. *Sympathetic movements.*—These are the actions of sneezing, &c., which we find it out of our power to effect by our will alone; the imitation of laughter, for instance, is imperfect, and does not take place with that convulsive associated movement of the muscles concerned. The author states his opinion that the acts of voluntary vomiting, of which some persons are capable, do not resemble true vomiting, but are rather acts of mere regurgitation.

6th var. *Movements of expression*—M. Debrou here objects to the use of the term respiratory nerve of the face applied by Sir Charles Bell to the facial—looking upon this as the nerve of expression of the face, and esteeming it associated with the respiratory muscles as well as other muscles of the body—only in its sympathetic relation in all. In all the above there remains only the consciousness of the performance of the movement to distinguish such involuntary acts from those of organic life.

Second Class.—1st var. *Movements which are voluntary or involuntary according to habit acquired.*—Thus by exercise we are enabled to contract the eyebrows individually, or the posterior aural, whilst by non-usage they become disobedient to the will, and yet perform involuntary movements.

2d var. *Involuntary movements to avoid danger.*—Closure of the eyelids to escape a threatened blow on the eyeball is an instance in point.

3d var. *Involuntary movements of irritation*, such as those which we make on seeing another fall, or the acts of self-defence instinctively performed when a blow is threatened.

4th var. *Involuntary gestural movements*, which accompany speech, for example.

\* Archives Générales de Méd., Sept. 1847.

† We think that the fact of the preservation of the mode of nervous supply to the muscles of the eye, prevalent among the lower vertebrates, is a better argument in favour of the influence of education, than the possibly ill-observed actions of the eyes of the newly born is against it.



In prosecution of his inquiry, M. Debrou, in a second paper.\* discusses the opinions which are held on the subject of the kind of dependence which the above movements have on nervous influence. Allowing that most of them are explicable by the received theory of reflex action, he finds this insufficient to account satisfactorily for the co-ordination of these movements, except upon the assumption of one or more centres in the myelencephalon similar to that allowed for respiratory movements. He also fails to discover a cause for the train of involuntary movements named *expressive* amongst others of the first class.

7. *Irritability of Muscle*.—Dr. Todd† demurs to the views of Dr. M. Hall, which ascribes an increased irritability to the muscles of paralyzed limbs, where the lesion is in the brain, and makes a distinction between spinal and central palsy in the loss of irritability in the paralyzed muscles in the former case, and its augmentation in the latter. Dr. Todd adduces a series of trials on cases of hemiplegic paralysis by means of galvanism, in the great majority of which the palsied muscles respond less to the galvanic stimulus than the healthy muscles, while in others again they are equally excitable with the muscles of the sound limb. The author adduces proofs that the difference in the excitability of muscles in cases of paralysis is due to the different state of the nervous force in the nerves of the palsied limbs; in one class of cases it is in a minus condition, in the other in a plus condition, and in a third it is unaffected by the cerebral lesion. The author further points out that in truth the muscular irritability has nothing to do with the phenomena in question; that that power is always in direct proportion to the nutritive condition of the muscles; and that the effects of galvanism, when propagated through the nerves, is not a true test of the state of the irritability of the muscles, but rather of the excitability of the nerves themselves. Dr. Todd states that the tendency of strychnia to affect paralyzed limbs first is due to its accumulation in the blood, and an attraction towards the side of the brain where lesion exists. The irritation here produced gives rise to the usual cerebral influence upon the muscles of the opposite side of the body.

8. *Muscular Excitability*.—Dr. Harless‡ introduces some experiments of muscular irritability by remarking that the difficulty to be encountered in demonstrating that property, consists especially in our inability to detach muscle from nerve; that such separation is objectionable on account of the speedy death of the muscle, and its immediate failure of nutrition. He thought to find a means of insulating muscular from nervous force in the power which ether possesses on the latter; and his experiments, though they failed in their object, are yet interesting in other points of view. A rabbit etherized in a convenient apparatus, gave movement to irritation by galvanism, some time after simple stimulation by pricking, &c., ceased to produce any stir; this, however, yielded to further inhalation, and then a moderate current produced no movement. The animal was now killed by opening the carotid arteries, and then, though the current being applied to the nervous centres, and again to the principal trunks, muscular action did not ensue, yet when the irritation was directly given to those muscles, a vivid contraction took place. Such a circumstance is explicable on the supposition that the muscles retained the force supplied them by nervous influence previous to irritation; whilst it shows at least that etherization deprives the nerves of their conducting power; and Dr. Harless suggests that this may be due to the direct action of the ether upon the fat of nerve, "their chief constituent."

Dr. Dowler§ states, that, for a considerable period after death, muscles continue to possess an irritability which answers to the stimulus of a mere blow sharply given. That this is sufficient to cause contraction so marked as to bend the arm (the brachial muscles being the subject of the experiment) even to a right angle, whence it will fall into the attitude of complete flexion. That this faculty may last even after many hours, may exist when the limbs are detached and drained of blood, and though exhaustible by repeated blows, will re-accumulate; he states that he has noticed it even ten hours after death.

9. *Contraction of Muscle*.—M. Prevost|| describes the act of contraction of a mus-

\* Archives Gén. de Méd., Oct. 1847.

† Medical Gazette, Report of Paper read at Medico-Chirurg. Society, July 23, 1847.

‡ Müller's Archives, No. 2, 1847.

§ Amer. Journal, Oct. 1846.

|| Comptes Rendus, 31 May, 1847.

cular fibril as observed by himself, and thus confirms the observations of Weber, mentioned in the last Report. He says, "when a muscular fibril contracts, the folds lie close by the approach of the particles which constitute the fibrinous cylinder; these gravitating, as it were, in a longitudinal direction, occupy a less space, and thus determine the appearance of the folds" He also gives some observations upon the influence of different fluids on the contraction of a detached muscular fibril.

FLUID.	DURATION OF CONTRACTION.
Water of temp. 25° cent.	30 to 40 min.
Water mingled with $\frac{1}{4}$ th part of a saturated solution of chlorine	} A more energetic contraction for shorter time.
99 parts water mingled with 1 part of hydrocyanic acid	
99 parts water with 1 part of morphia	Energetic contraction 2 min.
99 parts water with 1 part of sulphate of strychnia	5 or 6 min.
	} Very lively contraction about 3 min.

10. *Development of Muscular Fibre*.—M. Prevost\* has observed, that in the embryo of vertebrata the muscles of animal life have primarily the form of gelatinous cylinders very transparent; later, the central part of these cylinders is organized in reddish filaments; these occupy little by little all the interior of the cylinder, and the jelly which surrounds them gradually thins, and becomes a fine envelope. In vertebrata, crustacea, and insecta, the muscles of animal life differ strongly from those of organic, whilst the fibre of the heart holds a place intermediate. Muscles of voluntary movement present regular cylinders, but those of the intestines consist of packets of straight juxtaposed fibres. In mollusca, the movements of which remind us of peristaltic action, both systems present fibres like those called organic.

11. *Microscopy of Muscle*.—M. Bourguery† states, that all muscular fibres in the tongue are "flattened," riband-like, i. e. their section is ellipsoid. Diam. 0.50, 1, and 1.25 millim. broad, 0.25–0.75 millim. thick. In general the greater diameter is so placed, that in the longitudinal and transverse fibres it is vertical, in the vertical fibres antero-posterior.

### § III.—Circulation.

12. *Contractility of Arteries*.—E. and E. H. Weber‡ have succeeded in proving, by galvanic agency, the muscular nature of arteries whose calibre is small, but they obtained no satisfactory evidence, from their experiments, of contraction in larger ones. They have employed the rotating electro-galvanic apparatus, and have subjected the vessels of the mesentery of frogs to its influence. Arteries of the chosen size, i. e. 1.7th to 1.17th of a line diameter, so acted upon, did not on the instant answer to the irritation, but soon after contracted to a third of their previous diameter; if the irritation were continued, the artery progressively diminished, until the stream of blood-corpuscles was but a single row, or even became interrupted. This narrowing was limited in extent by the range of electric irritation, and produced on the stream of blood a marked acceleration, according to the law of hydraulics observed in diminished tubes. The contraction is only temporary, and the arteries recover completely their normal size and condition, being liable to renewed contraction on a fresh application of the electricity. Capillary vessels, 1.96th of a line in diameter, or thereabouts, exposed to electric stimulus, evinced no contractility, neither were they dilated, but coagulation of the blood was observed to take place. A weak electric stimulus produces, after an interval, a sensible retardation of the stream of blood, which seems to be due to the coherence of the blood-corpuscles, or adherence to the walls of the vessel, with the greater friction of their movement; and this retardation speedily ends in a total stop, whilst the newly-arriving blood-corpuscles accumulate, and fill up the vessel until collateral passages relieve the pressure. After a time the blood-corpuscles disperse once again, and the circulation is restored. A similar retardation and

\* Comptes Rendus, 31 May, 1847.

† Gaz. Méd., 27 Feb. 1847.

‡ Müller's Archiv, 1847, No. 2.

impeding of the circulation are occasioned in minute veins by electric agency, but in these it does not take place with the same facility as in the arterial capillaries, apparently because the stream is less rapid.

13. *Heart, Development of.*—MM. Prevost and Lebert\* announce the following facts: 1st. That in the chick there is a primitive transitory heart, early divided into two equal portions, as also in mammals, but in animals with a single ventricle it is undivided. 2d. That there exists a transitory bulb, divided in mammals and birds, undivided in batrachians and in fishes. 3d. The permanent heart appears first beneath the transitory left ventricle as a permanent left ventricle. 4th. The permanent right ventricle forms later beneath the transitory right ventricle: the large development of the left determines its position upon that. 5th. The transitory bulb is a part of the heart, entirely different from the permanent bulb of the aorta; this is formed later, and only after the appearance of the permanent left ventricle. 6th. There are two primitive aortæ (as M. Serres observed), but the permanent aorta is not formed by the metamorphosis of those: this appears between the two primitive, which disappear, and the descending portion of the permanent aorta results from two short vessels, which leave the branchial sinuses at the place where the primitive aortæ are detached, and blend in front at the median line. 7th. The portion of the permanent aorta which curves on leaving the bulb, joins the descending aorta beneath the junction of its roots, and not, as is believed, at the level of the third branchial arch. 8th. In the transitory bulb are formed two vessels which join to form the branchial vessel, from which the arteries of the branchial arches part.

#### § IV.—*Respiration.*

14. *Respiratory Movements.*—Mr. Hutchinson† conceives that he has established the following propositions regarding the acts of respiration:

1st. Costal breathing may be distinguished from abdominal by determining which part is first put in motion, and the kind of respiration may be designated according to the name of such part.

2d. Healthy costal breathing begins with the motion of a superior rib, which is followed by lower ones in succession.

3d. Ordinary respiration in men is abdominal, in women costal; extraordinary breathing is the same in both sexes.

4th. Any of the ribs, from the twelfth to the first, may carry on respiration.

5th. Diseased respiration is of various kinds; the movements may be symmetric or not symmetric, costal or abdominal; all or none of the ribs may move or not; the chest may dilate in all its dimensions at the same time; costal and abdominal breathing may alternate with one another; costal motion may be undulating or not, and all these may be combined in one, which the author terms "hesitating breathing;" and, lastly, the quantity of air breathed is diminished when there exists pulmonary disease.

—Mr. Sibson‡ has studied the action of the various muscles concerned in respiration, and he compares the false ribs, as they are called, in mammalia to the simple ones of the snake, assigning to them in inspiration, first, an outward movement upon their vertebral fixed point, and second, a movement towards a horizontal plane, which is an elevation. These movements are the result of the action of the levatores costarum, and of the external intercostal muscles; but although apparently productive of respiration in the reptile, conduce but little to enlarging the cavity of the chest in mammalia. Ribs of the second order are called compound by Mr. Sibson, because they consist of two pieces, a spinal and a sternal rib, each of which has a fixed point. The movements which these ribs are capable of, are elevation, and (some of them) elongation, by straightening the angle at which the two pieces join. The effect of elevation of these ribs is in some degree modified by the dorsal curve of the vertebral column, which in the upper part of the thorax causes the ribs to approach, and in a measure to overlap each other.

—Mr. Hutchinson states that the intercostal muscles can, independently of any

\* Comptes Rendus, 22 Feb., 1847.

† Phil. Mag., Sept. 1847.

‡ Phil. Trans., part iv., 1846.



other muscle, elevate or depress the ribs; and that any one lamella can, as required, independently perform inspiration or expiration at any one of the twenty-two intercostal spaces.

—The respiratory actions of the following muscles are set down according to Mr. Sibson:

The *scoleni* raise the first and second ribs, and lower and bring forward the cervical vertebrae, the effect of which is to bring the origin more directly over the insertion of the muscle, for the benefit of difficult respiration; they also expand the apex of the lung, by widening the space above the first rib, where that rests. An additional "*scolenus pleuralis*," contributes much to this. The *external intercostal* muscles of the seven superior ribs are inspiratory; below the seventh they are inspiratory only near the vertebral column, expiratory in the rest of their extent. The whole series is considered inspiratory by Mr. Hutchinson. The *internal intercostals* of the first five ribs are inspiratory towards the sternum, but expiratory in the outer part, whilst all the rest are expiratory. *Levatores costarum*, inspiratory, acting chiefly upon the lower six or seven ribs. *Serratus magnus*, chiefly expiratory, the lower fibres alone in man being considered capable of inspiratory acts, and that only in forced breathing. *Serratus posticus inferior*, expiratory. *Lerator anguli scapulae*, inspiratory. *Serratus posticus superior*, inspiratory. In deep or difficult inspiration the trapezius, sterno-cleido-mastoideus, and sterno-hyoid and thyroid aid. In difficult expiration the latissimus dorsi acts. *Recti abdominis*, *obliquus externus* and *internus* are expiratory muscles, by their depressing action on the sternum and ribs. *Triangulares sterni* and *transversales*, expiratory, by compressing the chest. The *diaphragm* in man during inspiration is first flattened, then descends equally, "and the central tendon in its descent stretches and elongates the pericardial sac, increasing the space containing the heart."

15. *Structure of Lung*.—M. Rossignol, in a very elaborate memoir\* upon the intimate structure of lung, which, in addition to his own researches, includes a review of the opinions of others, confirms the fact, now universally received, that the fine air-recesses are terminal to their own proper bronchi, and disproves the erroneous notion of ramifying air-canals anastomosing one with another. The author has made his careful observations upon portions of lung prepared in the following manner: the pulmonary artery is injected with a fluid composed of spirit of turpentine, combined with a sixth part of copal varnish, and a quantity of porphyryzed vermilion, equal to the suspensive capacity of the liquid. The injection is pushed until it return by the veins, and then the bronchial tube, and by its means the whole lung, by degrees is inflated; the lung is then slowly desiccated, and when dry cut into thin slices. Such sections presented to the author numerous large, irregular, but for the most part hexagonal, cavities, which again present in their interior lesser pits of more regular shape, whose partitions are naturally limited in height, and uninjured by the section, whilst the larger ones, on the contrary, are formed by the knife. The interior lesser cavities he names "alveoli," in allusion to their resemblance to the cells of the honeycomb; the larger, containing cavities, he calls "infundibula," because they become narrower at their orifice, which opens into one of the later ramifications of the bronchi of the lobule. M. Rossignol recognizes five orders of division of the lobular bronchus, the earlier of which possess a smooth, subtransparent lining membrane, through which may be seen, as through the pleura of the lobule, the infundibula and their contained alveoli which surround them. The inner surface of the later divisions, namely, of the last two or three, on the contrary, present to microscopic observation gaulfre-like pits covering their walls, and quite distinct from the openings of alveoli, which are also to be observed of a rounded form; these recesses are called "parietal alveoli;" and their discovery is interesting, because their presence has hitherto been esteemed a distinguishing circumstance in the bronchi of birds, and that mammals were destitute of them. The following table gives measurements of alveoli and infundibula at different ages:

\* *Recherches sur la Structure du Poumon*, 1846.

† It is "de vernis de Cobalt" in the original, but obviously by mistake.

PULMONARY ALVEOLI.	Maximum in $\frac{1}{100}$ ths of millim.	Minimum in $\frac{1}{100}$ ths of millim.	Mean in $\frac{1}{100}$ ths of millim.
Fœtus 5 to 6 months . . . . .	0.05	0.02	0.03
Infants, which have either not respired or breathed for a few hours . . . . .	0.07	0.03	0.05
Infants, 18 months . . . . .	0.14	0.08	0.10
“ 3 to 4 years . . . . .	0.16	0.09	0.12
“ 5 to 6 years . . . . .	0.18	0.10	0.14
“ 10 to 15 years . . . . .	0.20	0.13	0.17
Adults, 18 to 20 years . . . . .	0.25	0.18	0.20
“ 25 to 30 years . . . . .	0.28	0.20	0.22 to 0.25
Men of mature age, 35 to 40 years . . . . .	0.30	0.25	0.30
“ “ “ 50 to 60 “ . . . . .	0.35	0.25	0.33
Old men, 70 to 80 years . . . . .	0.40	0.25	0.33 to 0.35

INFUNDIBULÆ.	Base.	Orifice.
Infants of 3 years . . . . .	0.25 to 0.40	0.08 to 0.14
Adults of 40 years . . . . .	0.50 to 0.85	0.30 to 0.40
Old men of 72 years . . . . .	0.60 to 1.50	0.35 to 0.70

16. *Respiration of Oxygen.*—The degree of respirability of oxygen has been the subject of many experiments by M. de Lapasse,\* who finds that when precautions were taken to remove the noxious results of expiration and transpiration, a bird would live in the pure gas at least three days; and that he himself could respire, with only occasional bronchial irritation, large quantities of the gas. This, however, is nothing more than a corroboration of the fact which we have on the authority of Allan, and Pepys, Lavoisier and Seguin.

Upon the question “*where occurs the chemical change of the blood through oxygen?*” M. Mulder† demonstrates the error of Magnus, who had asserted‡ that oxygen, simply held in solution in arterial blood, did not enter into chemical combination until it reached the systemic capillaries. Mulder shows that Magnus’s experiment to ascertain, by agitating blood with oxygen, whether it were capable of dissolving that gas, is not demonstrative proof that in respiration it does so; neither can he think that blood, whose composition is so complex, can be fairly compared to water in that same respect. Another ground on which Magnus rests his opinion is, that the blood in the lungs is not warmer than in other parts of the body, which is answered by the fact that the evaporation of water and the mixture of cold venous blood must influence it, whilst a manifest increase of temperature has been observed in the left ventricle. Davy also found a rise of temperature on mixing oxygen with blood. Mulder concludes that no reason is offered why oxygen should not commence its chemical action on the blood in the lungs.

17. *Fat collected for Respiratory Purposes in Insects.*—“Whilst pursuing other researches,” says Dr. Thomas Addison,§ “on the tracheal system of insects, it was constantly found that the ultimate coiled terminations of the tracheal vessels were inclosed most accurately in a system of flask-shaped vesicles, containing globules of brilliantly yellow-coloured fat. Mr Newport regards the adipose tissue in insects as connected with the circulating system. Oken, Burmeister, and Treviranus annex the system of cells containing the fat to the biliary functions of the body; but there can be no doubt, from the relations and dependence of the oil-cells with regard to the tracheal system, that they should be viewed as associated, in some

\* Archives de Physiologie, p. 276, 1846.

† Archives Générales d’Anat. et Phys., Nov. 1846.

‡ Annales de Chimie et de Physique, tom. x.

§ Guy’s Hospital Reports, vol. iv. New series.

way or other, with the respiratory process: as a reserve store for consumption when the system (the solid organs of the body) would otherwise be exposed to the destructive agency of the oxidizing air."

18. *Lymphatics of the Lungs*.—Dr. Jarjavay\* gives a very elaborate account of the lymphatic vessels of the lung; he arranges them, for convenient description, into plexuses, and vessels properly so called, and these are superficial and deep. The *superficial plexuses* are spread upon the lung beneath the pleura; they present varieties in the form of the meshes, which are lozenge-shaped, or round or variously angular, in the size of the vessels, and in the moniliform character of some. These last are chiefly those in the fissures, and the swellings on them are sometimes of considerable size, whilst the alternating narrow part sometimes impedes, or wholly stops, the flow of mercury through the vessel; this character is named *varicose* by the author, and the simpler condition is distinguished as *capillary*. It is common to find the capillary vessels occupying chiefly the surface of the upper lobe, and a portion of the lower, but the varicose, without exception, in the fissures and on the median face of the lung, especially about its root. The lymphatic plexuses at the borders of the lung, consist of straighter vessels, and are, in fact, the secondary trunks, which in turn discharge themselves in two or three principal vessels; these are, for the lower lobe, two constant and a third occasional; they range the angles of the lung more or less parallel to it, and terminate in the bronchial lymphatic ganglions. The "*vessels*" of the upper and middle lobes are more numerous; they occasionally dip under the surface, because they are overlapped by a lobule, but they always reappear; they assemble to terminate in the bronchial ganglions. It is worthy of remark that the black matter so constant in the lungs, has its seat in the track of the vessels of the varicose plexuses, and thus the pattern of these is mapped out by that black substance. Occasionally, pale lines mark out sundry black spots, these indicate swellings of the lymphatics, and it has often occurred to the author to inject the vessels by plunging his pipe into one of these spots. The *deep plexuses* are said to be those of the mucous membrane of the bronchi, but the author has failed to perceive their primary union with trunks. The *deep vessels* run between the large trunks of the bronchi and those of the pulmonary artery. To the question of how the lymphatics of the lung come into connection with those of the heart, and finally with the thoracic duct, the author's injections have failed to afford a satisfactory answer; he finds, however, that, for the most part, ganglions seated about the roots of the lungs receive the vessels, although he has noticed branches go directly to the thoracic duct, and in other cases join the diaphragmatic, œsophageal, &c. &c. The ganglions about the left bronchus also receive the lymphatics of the heart, which reach them after following the curve of the aorta.

19. *Larynx*.—M. Segond† has remarked that ossification of the cartilages of the larynx commonly arises about the insertion of the muscles, and that whilst age is apparently the condition of its occurrence, an order of liability is observed—that the cricoid is first the subject of ossification, and the arytenoid are rarely affected. He suggests that this ossification must have considerable influence upon the voice, by impeding the several movements of the apparatus.

#### § V.—*Digestion.*

20. *Salivary Glands*.—Those glands commonly ranged under this head differ from one another in function, so as to divide into two orders, established by M. A. Bernard.‡ after researches undertaken to prove the origin of the diastase discovered in the saliva by Leuchs. The one division of salivary glands consists of the parotid, the buccal, and the labial glands, whose function is to secrete a simple fluid to aid in mastication; and experiment on horses shows this function to be most active when the food is of a dry nature, and least so when the reverse is the case. These glands are absent in vertebrate animals which do not masticate (fishes, for instance). The second class consists of the submaxillary, palatine, and tonsillar glands, which secrete a thicker, mucous fluid, whose use is in deglutition. These are not wanting in fishes.

\* Archives Générales de Méd., Jan. and Feb. 1847.

† Comptes Rendus, 29 June, 1847.

‡ Archives Générales de Méd., Jan. 1847.



21. *Saliva*.—The salivary secretion has, erroneously, been supposed to have the catalytic property of converting starch into sugar. M. Bernard's experiments prove that this property resides not in the fluid derived from the glands, but in the mucus of the mouth, which holds decomposing animal matter in solution, and transmits that to the saliva. Not only are the parotid and submaxillary secretions incapable of this fermentive action when separate, but also when mixed; whilst mucus taken from the mouth effects the change singly. Moreover, the catalytic process is altogether counteracted by the acid of the gastric juice.

22. *Deglutition*.—Dr. F. Wild\* has experimented upon the movements of deglutition, more especially those of the pharynx and œsophagus. His subjects have been for the most part dogs; and he has narcotized them for his purpose by injecting an alcoholic solution of opium into the external jugular vein. It was found necessary to do this, on account of the impossibility of exciting reflex movements whilst voluntary power remained; and after the loss of this, there were observed automatic movements, i. e. produced without apparent external cause. Dr. Wild considers the pharyngeal movements to be voluntary, reflex, or automatic. Irritation (by gentle rubbing with the finger) of any portion of the pharynx produced, in most cases, contractions varying in extent, but not merely local, and commonly simultaneous on both sides; this same irritation occasionally produced also partial contraction of the œsophagus, or, it may be, even complete peristaltic movement. On the contrary, irritation of this kind, applied to the œsophagus, causes only local contraction, which is more vivid in the lower (thoracic) portion than in the cervical; however, simultaneous irritation of mucous membrane and muscles in the upper portion of the œsophagus did, in some cases, produce peristaltic movement. Peristaltic movement of the œsophagus is always produced by a progressive irritant, such as the presence of a ball in the tube; and then is seen to consist in simultaneous shortening and contraction of successive portions of the œsophagus, no part being overleaped by the movement. Any interruption of the movement, such as may be caused by pressing upon one particular part, or by division of the muscles, the mucous membrane being preserved entire, causes a total extinction of it. Thus it appears that whilst the movements of the pharynx are associated, occurring as they do simultaneously on irritation wherever it is made, those of the œsophagus are not associated either amongst themselves or with those of the pharynx, for limited irritation produces only local contraction. Dr. Wild has failed to produce an antiperistaltic action in the œsophagus, although he tried, by placing a ball above the point irritated; and he observed that where vomiting occurred, the œsophagus submitted to a passive widening by the substances expelled from the stomach.

23. *Gastric Secretion*.—Dr. Robinson† has observed that the albuminous contents of the stomach of fœtal rabbits become coagulated by the gastric juice shortly after birth, and a certain duration of respiration, whilst in those which have scarcely breathed, no such change takes place in the fluid; thus proving that a high degree of oxidation is needful to the performance of the secreting function of the stomach.

24. *Intestinal Absorption*.—Oesterlen‡ finds that charcoal and Berlin blue, taken into the stomach of rabbits, &c., are partially absorbed; for the blood of the mesenteric veins may be found to contain minute atoms, of a size varying from 1-300th to 1-60th or 1-42d of a line.

—Professor Matteucci§ shows that fatty matter, in the form of an emulsion, is readily absorbed by animal membranes. He formed an emulsion of olive oil, and filled a portion of animal intestine with it. Having immersed this bag with its contents, in a weak solution of potash, he observed the emulsion become diffused through the alkaline circumambient fluid. More precise results were obtained by means of an endosmometer, filled with alkaline fluid, and immersed in the above emulsion, when a rise in the contents of the test-tube took place, to the extent of an inch, in a very brief space of time.

25. *Liver*.—The very admirable ascensive survey of the hepatic organ of secretion, by Dr. Thomas Williams,|| demonstrates very clearly that it may consist of

\* Month. Journal, Aug. 1847.

§ Lancet, June 3, 1847.

† Monthly Journal.

|| Guy's Hospital Reports, 1846.

‡ Ibid.

simple aggregations of nucleated cells, supported by a basement membrane, and that the actinia really possessed such a form of liver; and that even the *acalephæ* are destitute of any better provision. Mr. Handfield Jones,\* in a treatise apparently similar to the above, states that in the bryozoon the hepatic organ "is clearly of a follicular type." He also holds the opinion that the cæcal appendage of the *stomach* of *asterias* shares the function of liver with the cæca of the anus. Dr. Williams had shown, however, that the former did not contain the characteristic biliary nucleated cells, and, besides, had much elastic tissue in its structure. He suggests that its function might be that of pancreas.

#### § VI.—Nutrition.

26. *Nutrition*.—Professor Paget† has elucidated, in a very striking manner, the meaning of an hypothesis of Treviranus, suggesting "that each organ, while it nourishes itself, serves the purpose of an excretion, in that it removes from the blood certain constituents, which leave that fluid in a state more fit for the nutrition of other parts." And in the same degree, it is thought probable "that the consequence of the existence of certain materials in the blood is the formation of an organ, or structure, into the composition of which those materials may enter. For example, when one kidney is destroyed the other often becomes larger, does double work, as it is said, and the patient does not suffer from retention of urine in the blood. The full meaning of which seems to be, that as the principal constituents of the urine are ready formed in the blood, and are separated through the kidneys by the agency—that is, by the development, growth, and discharge—of the renal cells, it will happen that if one kidney be destroyed, there must, for a time, be an excess of the constituents of the urine in the blood; for since the separation of urine is not mere filtration, the other kidney cannot at once, and without change of size, discharge a double quantity. The kidney therefore grows; more renal cells develop, and discharge, and renew themselves; in short, the existence of the constituents of urine in the blood induces the formation of renal substance." By combining these two hypotheses, "firstly, that the blood is definitely altered by the abstraction of every material necessary for the nutrition of a part; and, secondly, that the existence of certain materials in the blood induces, or at least favours, the formation of corresponding tissues, it seems to follow, as a reasonable hypothesis, that the order in which the several organs of the body appear in the course of development, while it is conformable with the law of imitation of the parent, and with the law of progressive ascent towards the higher state of being, is yet (at least in part, and this part more directly) the result of necessary and successive consequences. The formation of one organ, or series of organs, inducing or supplying a necessary condition for the formation of others, by the changes successively produced in the composition of the nutritive material from which they all take their nutriment. In other words, the development of each organ or system, co-operating with the self-development of the blood, prepares it for the formation of some other organ or system, till, by the successive changes thus produced and by its own development and increase, the blood is fitted for the maintenance and nutrition of the completed organism." Mr. Paget finds instances of this complementary relation of organs and tissues, in the coincident development of hair on certain parts of the body, and of the genital apparatus. Parallel to which is the perfection of plumage at the period of full activity of the reproductive organs of the bird, particularly the male. And he remarks that as in man, when the development of the genital organs is prevented, that of the beard and all the other sexual characters is, as a consequence, hindered; so in birds, when the breeding season ends, and the sexual organs pass into their periodic atrophy, the plumage assumes paler and more sober colours, characteristic of barrenness. A similar relation is well known in the development of the antlers of the deer and the reproductive organs; and Mr. Paget, in explanation of this connection with development having no apparent purpose in the generation of the species, observes, "that where two or more organs are thus manifestly connected

\* Phil. Mag., Sept. 1847. Report of Royal Society.

† Lectures delivered at Royal College of Surgeons, 1847.

in nutrition, and not connected in any external office, their connection is because one is partly formed of materials left in the blood by the formation of the other; so that each, at the same time that it performs its own proper and external office, maintains the blood in the condition most favourable to the formation of the other.<sup>27</sup> Lastly, he suggests that in this theory may be found the meaning of the commensurate development of many other organs which in their function appear unconnected; such are the thymus gland and the air-breathing organs, the thyroid gland and the brain, the spleen and pancreas, and the embryo and mammary gland of the parent.

27. *Relation of Albumen and Oil*—Dr. Hughes Bennett,\* following up the discovery of Professor Ascherson, that albumen coagulates and forms a membrane around oil with which it may be in contact, shows that the membrane so formed is of very definite structure, since the globules surrounded by it float and roll over each other without uniting, whilst their immersion in water causes them to swell out and enlarge by endosmosis. He illustrates the fact by the observation that milk requires the aid of mechanical power to destroy, as by churning, the caseous envelops of the globules, unless, indeed, acetic acid be made to dissolve the membrane, when the process is much facilitated. Dr. Bennett proceeds to say "that when it is remembered that oil and albumen pervade all organized bodies, that they are continually coming in contact, and that membranes and cells must thereby be necessarily produced; moreover, as the other soluble elements which enter into organized structures must communicate to the fluids various kinds of densities—it will be clear that all the physical conditions necessary for endosmosis and exosmosis must be present. When, in addition, it is considered that modern anatomy and physiology have demonstrated that all organized structures originally consisted of cells, composed, in like manner, of a membranous envelope, and endowed with the same physical properties, must be recognized. He considers, therefore, that the blastema containing the necessary nutritive elements in solution precipitates minute oily particles which are the elementary granules of histologists. These, either separately or united, constitute nuclei composed of oil, surrounded by an albuminous membrane. In this condition they become subject to the physical law of endosmosis and exosmosis, and absorb or exude materials, according to the circumstances in which they are placed, and the unknown vital power to which they are subjected."<sup>27</sup>

#### § VII.—*Nervous System.*

28. *Etherization*.—The phenomena of etherization have been the subject of such repeated observation and reiterated comment, that they are rendered perfectly familiar; and it seems necessary here only to allude to the experiments instituted upon the inferior animals, with the design of explaining them. MM. Flourens, Longet, Series, &c.,† eminent as neurologists, have for the most part corroborated the testimony one of the other. Thus we find it said that, in etherized animals, sensation is absolutely suspended for a time, both in the parts of the cerebro-spinal axis, ordinarily sensitive, and in the nervous cords themselves. Experiment demonstrates this, for a dog, and in another case a fowl, having been etherized, gave no sign of sensation when undergoing the operation of exposing the spinal cord, which was done in the dorsal region; then the posterior roots of the nerves were pinched and otherwise irritated, but no cry or movement could be discerned. Motion also is, under these circumstances, nullified in the muscles of animal life; nor is it to be excited by stimulation of the motor roots of the nerves.‡

Injury of the myelonal chord itself is quite unproductive of any sign of pain, and Longet asserts the same of the medulla oblongata; but Flourens observes that signs of suffering are constantly evoked by injury of this part of the myelencephalon; in proof of this he adduces several experiments upon dogs, who having become insensible by etherization (after inhalation for thirty-five minutes, twenty-five

\* A Paper read to the Royal Society of Edinburgh.

† Comptes Rendus, 1847.

‡ This subject is elsewhere noticed more at large; vide *Muscle*.



&c.), and permitting the exposure of the myelon and medulla oblongata without suffering, evinced no recognition of injury, either to the spinal nerves or the chord itself, yet uttered cries, and betrayed slight twitching muscular movements upon pricking the medulla oblongata.

The degree to which insensibility is carried is well illustrated by the fact observed by Longet, that the pupil does not contract at the stimulus of light on the optic nerve, although this is a sign of life the very latest to disappear on the approach of death. It is well known that the eyeball may be touched without producing movement of the eyelids during the state of etherization; and this is associated with the observed absence of reflex movements in the pharynx, glottis, &c., which have led to fatal consequences in certain operations upon the tonsils.

Etherization consists in a gradual overpowering of nervous influence, in which may be noted a particular order and sequence of stupefaction, attributed to the successive subjugation of particular seats of intelligence. First influenced are the cerebral lobes, the seat of intelligence proper; next the cerebellum, which maintains an equilibrium of locomotive movements; third, the medulla spinalis, which M. Flourens looks upon as the principal seat of sensation and motion; but here he differs somewhat from Longet, who places etherization of the annular protuberance in this period. Finally, Flourens says that when the medulla oblongata becomes subdued, life is extinguished; for in several of the above mentioned experiments on dogs he continued the ether administration for a great length of time (one hour or more), and noticed up to the last instant indications of sensation, produced by pricking the medulla oblongata. The effects of the inhalation of ethereal vapour then correspond, so far as they go, with the experiments of removing portions of the brain; and this suggests to Longet the reflection that it is possible to isolate general sensibility and intelligence. It is, however, to be said that the phenomena of etherization do not seem always to appear after this order in man; that inexplicable cases occur where consciousness, reasoning power, remains after the complete quelling of the perception of pain, when the region which is commonly most susceptible appears the least so. Those cases in which movements, recognized as arising from suffering, occur without knowledge of the patient, are explained by supposing that imperfect etherization, embracing intelligence and sensation in part only, allows pain really to be felt, but that memory fails to retain the circumstance.

M. Longet says, that in etherization the ganglionic system appears to be super-excited, and to become in a manner the diverticulum of the nervous force, which temporarily abandons the cerebro-spinal system. Opposed to this, however, we have M. Mandl's experiment, showing that the peristaltic action of the intestine ceased, but the mesenteric arteries pulsated. Doubt, however, lies on this, for the motive tracts of the myelon were not wholly etherized.

The stupor developed by ether may, as Dr. Simpson\* has shown, and as Dr. Protheroe Smith† confirms, be continued for many hours by repeated inhalation, but it may not safely be carried beyond a certain stage; thus Longet observes that etherization, pushed beyond insensibility, causes death in rabbits in about six to twelve minutes, and Flourens killed dogs by trying how long the medulla oblongata would continue to be sensitive, the inhalation being persisted in. Longet ascribes death to a species of asphyxia, taking its rise in the respiratory nervous centre; Flourens does not call the death asphyxia, but ascribes it to the same cause as Longet apparently; he holds the difference to be this, that asphyxia is a negative death from want of oxygen, whilst the last result of ether inhalation is a positive death, proceeding from direct influence of the vapour.

M. Serres gives the results of experiments upon the influence which fluid ether has directly upon the nerves: if one of two nerves which have been laid bare be immersed in ether, it will in a few minutes become totally insensible to injury below the point of immersion, whilst the other one, similarly exposed, but not acted on by ether, will preserve its natural sensation. Longet says that this etherized nerve will still be in some measure subject to the will, and also will transmit an electric current; but it appears that this error arises from the incomplete penetration of the ether, whereby the centre of the nerve is still healthy,

\* Monthly Journal.

† Observations on the Use of Ether.

though the outer part be injured. That the nerve really sustains injury is apparent from the fact, that when the sciatic nerve of a rabbit was exposed, and its sensibility destroyed by ether, the wound was allowed to heal, and six days after the tibial nerve was insensible to injury. Besides, MM. Pappenheim and Good describe the effects observed by them to take place in neural substance under the influence of ether: the sheath of the nerve was seen to detach itself from its contents, and a coagulation to occur in the latter, which speedily assumed a grumous appearance. These gentlemen observed that the penetration was gradual, and that even the outer part may be defended by the proximity of surrounding tissues.

The influence of strychnia on the nervous system, and very markedly on the reflex function, is the opposite of that of ether; they are said to counteract one another, but strychnia applied to a nerve which has been subject to the direct action of ether, does not effect its restoration.

29. *Influence of Strychnine on the Nervous System.*—Professor Meyer\* and Dr. Marshall Hall† have repeated many well-known experiments relating to the influence of strychnia in producing spasmodic contraction of the muscles. Their subjects have been frogs, and the former physiologist has shown, by removing in different individuals a portion or the whole of the brain, that, on the administration of strychnia, tetanus still affects those parts of the body which continue in connection with a nervous centre. Further, tetanus is not produced if the posterior roots of the nerves be divided previously, from which it is concluded that the tetanic state is the product of a reflex act; and in proof of this Dr. Hall shows, that though a frog lies quiet after the first spasm, a breath, a touch, or a shock of the table, suffices to reproduce it with violence. He also says, however, that the first spasm appears to be the result of a voluntary movement, which, stimulated by the will, is yet out of its control when once in action, and that the animal appears thenceforth judiciously to refrain from any such perilous exercise of its volition.

Professor Meyer seeks to trace the reflex function to the spinal cord, and to ascertain what portion of that is essential to its development; he has, therefore, exposed the myelon, and removed with scissors the gray matter of the cord as far as the origin of the nerves of the posterior extremities, and then administered strychnia without producing tetanus beyond the posterior limbs. It is quite fair, however, to doubt a result drawn from an experiment so very difficult to perform, and it is, therefore, by no means proved that the gray matter of the cord is the more immediate agent in the reflex function.

Dr. Hall points out the difference in character between tetanus produced by strychnia (which, in his experiments, was absorbed by the cutaneous surface), and that consequent on the passage of an electric current through a nerve; the latter is constant whilst the irritation lasts, but the former is intermittent, only reproduced by external causes. He takes occasion from this to observe, that the two are types of two different forms of tetanus when observed as a disease; the one, the “electrogenic” state, resembles disease which directly excites the medulla spinalis, such, for instance, as exostoses in the spinal canal; whilst the other correspond to states of the myelon where that is not *excited* but only *excitable*; such are traumatic tetanus, hydrophobia, &c., where the actions are reflex, not direct.

30. *Optic Thalami.*—In a series of experiments upon rabbits, made after the publication of his essay “De vi motoria baseos encephali,” Dr. Schrieff‡ observed the following consequences of injury to the optic thalami. &c. 1st. The lower parts of the optic thalami, and the whole thickness of the crura cerebri, are slightly sensitive. 2d. If one thalamus or one crus cerebri be destroyed, a rotation around the transverse axis of the body takes place. This movement is not due to a hemiplegia of the opposite side, for it takes place even when the action of one of the extremities of the injured side is prevented. 3d. The injury of any part of the hemisphere above the thalamus produces no such ruling movement. 4th. The change from the rotatory movement to the rolling movement is observed only

\* Monthly Journal, Aug., 1847.

† Comptes Rendus, 14 June, 1847.

‡ Schmidt's Jahrbücher, No. 6, 1847.

when, in consequence of the operation, the lateral part of the pons is compressed. 5th. The rotatory movement depends on a deviation of the two forefeet towards the side opposite to the direction of the rotation, combined with a movement of the neck *towards* the direction of rotation. 6th. These deviations occur only in movements effected through the brain; they are never spasmodic. 7th. The anterior three-fourths of each thalamus unite in themselves the elements for the flexion of the body to the opposite side. When the portion of the thalamus included within this anterior portion is destroyed, the rotatory movement towards the injured side ensues in the way described above. 8th. But if the posterior fourth of a thalamus, or if a crus cerebri be destroyed, the deviation of the feet and of the neck will have the opposite direction, and the movement will be towards the side opposite the injured thalamus, in just the same manner as when the anterior part of the other thalamus is injured. 9th. There appears, therefore, to be a decussation of the fibres in relation with these movements, between the thalamus and the crus cerebri, which decussation probably takes place in a part lying above and behind the corpora albicantia, and reckoned as belonging to the substantia perforata media. 10th. The destruction of no azygos part of the brain above or before this portion of the middle line produces any paralysis of the extremities; but the median division of the floor of the fourth ventricle produces excitement of motion. 11th. If, in dividing the crus cerebri, the pons be injured, a partial paralysis of the hind foot, on the side opposite the injury, is added to the other deviations; and the movement takes the form of a rotation around the paralyzed foot, the whole body moving as the radius. 12th. Immediately after the destruction of an optic thalamus, or a crus cerebri, a few rotations are made *towards* the injured side—the effect, probably, of the irritation—they soon give place to the ruling movement. 13th. The part, irritation of which makes rabbits snarl and dogs howl, is anterior to the thalamus, in the neighbourhood of the anterior crura of the fornix. 14th. The rotation takes place in animals blinded by the removal of the humours of the eyes.

31. *Function of Nerve.*—E. H. Weber,\* after a series of experiments, having reference to the influence of cold and heat upon the function of nerves, comes to the following conclusions: When the ends of the nerves of the tongue are exposed to warmth equal to 40° R., or to cold approaching 0° R. (which he effected by dipping the tongue into warm or cold water), the power of these nerves to convey perception of taste became lost after a short time, so that the sweetness of sugar was unperceived. At the same time the power to distinguish between warmth and cold is lost, and different degrees of pressure are not discerned. The action of cold upon the trunk of the ulnar gives rise to a smarting sensation, quite different from the perception of cold. The ultimate ramifications of the nerves are, by such influence, either altogether deprived of the power to discern heat and cold, or stunned in a manner similar to that of pressure upon the trunk of a nerve, whereby the so called asleep condition is caused in those parts of the limb below the seat of pressure.

If the cavity of the nares be filled with water, which has an agreeable temperature, the sense of smell is presently lost. Weber says that the mechanism of the soft palate enables one to keep fluids from flowing down the throat when the nares are filled with it. The nasal passages filled with *l'eau de Cologne* afford no perception of the perfume: and when filled with sugar-water no taste is perceived, though the upper part of the pharynx and the soft palate are in contact with the liquid.

32. *Structure of Ganglion.*—M. Wagnert† has observed that really to exist, which Todd and Bowman, in their physiology, have suggested as possible, namely, that nervous fibrillæ take their rise immediately from the ganglion-corpuscles. In a communication to the Académie des Sciences, he says that each elementary fibre of the myelencephalic nerves which enters a ganglion, passes into a corpuscle, in which may be seen also its nucleus and nucleolus. From each ganglion-globule there rises another nervous fibre, which is prolonged into the peripheric branch; the branches which are thus seen to arise appear as the “*soi-disant*” sympathetic

\* Müller's Archives, No. 4, 1847.

† Comptes Rendus, 10 May, 1847.



fibres, but gradually enlarge, and assume the ordinary aspect. His observations have been most successful in cartilaginous fishes: raia, for example.

33. *Nerves of the Heart*.—Dr. Robert Lee\* has succeeded in dissecting nerves and ganglia in the muscular substance of the heart, and comes to the following conclusions respecting them: 1st. That the muscular and vascular structures of the auricles and ventricles of the heart are endowed with numerous ganglia and plexuses of nerves. 2d. That the nervous structures of the heart, which are distributed over its surface, and throughout its walls to the lining membrane and columnæ carneæ, enlarge with the natural growth of the heart, before birth, during childhood and youth, until the heart has attained its full size in the adult. 3d. That the ganglia and nerves of the heart enlarge, like those of the gravid uterus, when the walls of the ventricles and auricles are affected with hypertrophy. 4th. That the ganglia and nerves which supply the left auricle and ventricle in the normal state are more than double the size of the ganglia and nerves distributed to the right side of the heart.

34. *Nerves of Bone*.—M. Gros† has obtained some interesting particulars regarding the distribution of nerves to the long bones. Taking the femur of the horse as sufficiently typical of the ordinary plan, he finds at least three nerves to approach the nutrient foramen, two of them in company with the branch of the femoral artery, called by M. Gros “diaphysial,” and the third, occasionally double, by piercing the vastus internus muscle; all of these are branches of the crural nerve, but there is in man, it seems, a branch of the sciatic in addition. Arrived at the nutrient foramen, the nerves are disposed differently in some subjects, but commonly a ganglion is developed, which receives the nervous branch which came through the muscle at one end, and one of the satellites of the artery at an interval. One portion of the ganglion is somewhat distinct, and is situated within the foramen; it gives two branches which receive the other arterial satellite (which is distinct from the ganglion), and then penetrate the medullary canal. The rest of the ganglion lies beneath the periosteal artery, which, it is to be noted, is a branch of the diaphysial, whose other branch is medullary, and supplies two satellite nerves to it. Variety occurs in the ganglion as to situation, it being near to or more remote from the foramen, and as to form, it being occasionally double. The branches, both medullary and periosteal, follow, and ramify with the arteries, forming a network correspondent to the vascular, and the purpose of the ganglia appears to be to assemble, previous to this distribution, the nerves from several sources.

35. *Nerve—Contractile Movements*.—M. Mandl‡ having removed two or three ganglia with their connecting nervous cords from an insect, and placed them in a drop of water under the microscope, perceived distinct contractile movements of the nervous cords, or of the filaments which part from the ganglions. This observation is confirmed by M. I. Geoffroy St. Hilaire and by M. Serres. The movements are characterized as arching and vermicular.

36. *Descendens Noni*.—Dr. Parkman§ has observed a case where the descendens noni nerve was formed by combined branches of the cervical nerves, and a filament from the pneumogastric without any communication with the hypoglossal; it was similar on both sides.

37. *Movements of the Iris*.—In an amaurotic person, who was also paralytic for many years, the iris was observed by Dr. Seuhrl| to recover its mobility, contemporaneously with the restored muscular power which resulted from a continued antiphlogistic regimen. The sight was not restored, and impressions of light did not affect the iris; neither was movement provoked in it by any irritation of the conjunctiva, puncta lachrymalia, or mucous membrane of the nose. It was at the time of movement of the eyeball that the pupil, usually dilated, was observed to change its diameter, and to be especially influenced by action of the muscles of the eyelids. The author, from his experiments, comes to the following conclusions:—1st. Innervation of the levator palpebræ superior provokes movement of

\* Med. Times.

† Archives Générales de Méd., Jan. 1847, p. 135.

‡ Archiv. d'Anat. et Phys. Générales, Nov. 1847.

|| Archiv. für Physiologische Heilkunde.

§ Amer. Journal, April 1846.

the circular fibres near the papillar margin of the iris. 2d. Innervation of the orbicularis palpebræ provokes movement of the longitudinal fibres of the iris proceeding from the ciliary border. 3d. Contraction of the recti and obliqui-oculi provokes movement of both sets of fibres of the iris, feeble and undetined however; this observation is obscured by the interference of palpebral movement.

38. *Muscle of the Choroid*.—Brücke\* has recognized a muscular character in the gray ring which surrounds the anterior part of the choroid on its outer surface, and is known in man and mammals generally as "orbiculus ciliaris;" its structure resembles that of the iris, in whose immediate neighbourhood it exists, and it is found also in birds and scaly reptiles. Brücke names it "Spinnmuskel der Chorioidea."

### § VIII.—Of the Embryo.

39. *Division of the Yolk*.—M. Coste† has communicated to the Académie des Sciences the result of some observations relative to segmentation of the vitellus; a phenomenon which he has noticed in birds, scaly reptiles, and cartilaginous fishes, thus proving the distinction of animals presenting this phenomenon from others, in which the blastodermis is not so produced, to be erroneous. The author observes this difference, that whilst, in the former class, the segmentation happens to the entire vitellus, it is limited in the latter to the part which constitutes the cicatriculus.

40. *Membrana Decidua*.—The construction of the human decidua bearing in many points a resemblance to that in the dog, yet differs from it in this, that the villi of the chorion do not enter the "tubular uterine glands," as they have been clearly observed to do in both the dog and cat. Two circumstances oppose this mode of growth, and the resulting manner of relation between the maternal and fetal blood: first, the narrowness of the follicles; next, the compound branched condition of the villi opposed to the simple tubular character of the follicles. It is found by Professor Weber, to whom the above observation is due,‡ that the follicular glands of the uterus are pretty uniformly distributed and developed in the first period of conception over the fundus and body of the uterus. M. Hipp. Blot§ has traced the deciduous membrane upon the neck of the uterus, in direct continuation with the mucous lining at that part, and states that the mouth of the sac thus left open is stopped by the mucous plug; this fact is confirmatory of an observation which he had previously made upon ova of four months, in which he noticed the orifices of the Fallopian tubes, in addition to that of the neck of the uterus.

41. *Contents of the Fetal Stomach*.—Dr. Robinson|| has reported some interesting observations upon fetal rabbits, &c., made with the view of determining the source of the contents of their stomachs. The peculiar nature of this fluid matter is thus described by the author: "During the last ten days of its uterine existence, the stomach of the fetal rabbit is invariably distended with a semi-transparent fluid, of a dark green colour, extremely viscid, and coagulating by heat into a solid opaque mass. Viewed microscopically, it is found to consist of a clear liquid, suspended in which are numerous cells of different shapes, and several large globules of oil. The stomach, in such cases, presented but little vascularity, whilst the small intestines were plentifully supplied with blood-vessels. The chymous substance which the latter contained was evidently derived from the stomach, becoming, however, more opaque as it assumed the situation of the meconium. This substance, of a bright green colour, became, on the addition of a few drops of nitric acid, bright scarlet. At an earlier period, however, the contents are perfectly transparent, present no microscopical objects, are not at all viscid, and undergo no change by the application of heat or nitric acid; at the same time the intestines are void of meconium. The liquor amnii of these animals is a transparent almost colourless fluid, exhibiting scarcely any indication of the presence of albumen, and Dr. Robinson observed the fœtus swallowing this fluid.

\* Jahresbericht der gesamenen Medicin im Jahr., 1846, 1st Band.

† Comptes Rendus, 5 April, 1847.

§ Gaz. Méd., Oct. 9 and 16, 1847.

‡ Müller's Archives, 1846, pp. 425-8.

|| Month. Journ. of Med. Science, 1847.

He is of opinion that the fluid thus received into the stomach gains a nutritious material by the secretions of the salivary glands.

### § IX.—*Organs of Generation.*

42. *Uterus*—Weber\* has gained confirmation of his belief that the uterus as well as the mamma has its rudiment in the male. This rudiment he finds in the "vesicula prostatica," which is concealed in the "colliculus seminalis" of the prostate, and he recognizes it in man, in the beaver, in the horse, dog, cat, hog and rabbit. In the recently born rabbit he finds a very close resemblance in the male and female organization of that part, and he cites Ackermann's description of an hermaphrodite infant, in whom an uterus occupied the place of the vesiculæ prostatica, and ejaculatory ducts opened at its mouth, as if it were the caput gallinaginis.

43. *Vesicula Seminalis*—*Finis glandulosus Vasis Deferentis*.—Weber† finds a very small quantity of spermatozoa in the vesicula, compared with the quantity in the vas deferens; the glandular end of this he finds largest in the stallion. He assigns both to it and to the vesicula a secretory function.

### § X.—*Mammary Gland.*

44. The mamma, according to M. Deschamps (de Melun‡) presents in the higher mammalia (man, rumana, carnivora and rodentia), teats perforated by numerous milk tubes (15 to 20 in woman, 10 in the dog, 7 or 8 in the cat), each of which is the aperture of a small dilatation of a lactiferous duct. In solipedes, and perhaps also in pachydermata, the apertures are much less numerous (in the ass 3, in the mare only 2), and open two or three large ducts, which themselves receive the lactiferous tubes, and intercommunicate. Ruminants have one large cavity, or "reservoir du lait," belonging to each teat, which has likewise but one aperture; the reservoir is entered by the lactiferous tubes, whose orifices are closed by valvular folds of mucous membrane, whilst the free escape of the milk is prevented by similar folds in the aperture or tube of the teat, and by constriction of elastic tissue in the neck of that. Lastly, in marsupials, monotremes, and cetaceans, although there are numerous cavities, there is but one orifice, and the contents of the reservoirs is subject to expulsion by a special compressing muscle. Monotremes and cetaceans are destitute of a nipple, and marsupials nourish their young from the breast, before those are capable of suction.

The mucous membrane of the primary lactiferous tubes is simple, of the cavities of reserve, thicker, and mixed with elastic tissue; it is also folded so that, in ruminants, the cavity is multilocular; in the tubes of the teat there is elastic tissue, and at the orifice cuticular epithelium.

### § XI.—*Skin and its Appendages.*

45. *Hair*.—Professor Paget§ gives the following very interesting account of the development and death of hair, in illustration of the process of nutrition:—"An eyelash which naturally falls, or which can be drawn out without pain, is one that has lived its natural time, and has died and been separated from the living parts. In its bulb, such an one will be found very different from any that are still living, in any period of their age. In the early period of the growth of a dark eyelash, we find its outer end almost uniformly dark, marked only with darker short linear streaks, and exhibiting no distinction of cortical and medullary substance. Not far from its end, however, this distinction is plainly marked; dark as the cortical part may be, the medullary appears like an interior cylinder of much darker granular substance; and in a young hair, this condition is continued down to its deepest part, where it enlarges to form the bulb. Now this enlargement, which is of nearly cup-like form, appears to depend upon the accumulation of nucleated cells, whose nuclei, according to their position, either by narrowing and elonga-

\* Müller's Archives, 1846.

† Ibid.

‡ Gaz. Méd. de Paris, 1 May, 1847.

§ Lectures delivered at the Royal College of Surgeons, 1847; vide Med. Gazette.



tion, are to form the fibrous substance of the outer part of the growing and further protruding shaft, or are to be transformed into the granular matter of the medullary portion. At this time of most active growth, all the cells and nuclei contain abundant pigment-matter, and the whole bulb looks nearly black. The sources of the material out of which the cells form themselves, are at least two; the inner surface of the sheath, or capsule, which dips into the skin, enveloping the hair, and the surface of a vascular pulp, which fits in a conical cavity in the bottom of the hair-bulb.

"Such is the state of parts so long as the growing hair is all dark. But as it approaches the end of its existence, it seems to give token of its advanced age by becoming gray. Instead of the almost sudden enlargement at its bulb, the hair only swells a little, and then tapers nearly to a point; the conical cavity in its base is contracted and hardly demonstrable, and the cells produced on the inner surface of the capsule contain no particle of pigment. Still, for some time it continues to live and to grow, and we find that the vigour of the pulp lasts rather longer than that of the sheath or capsule, for it continues to produce pigment-matter for the medullary substance for some time after the cortical substance has been entirely white. Thus we can trace the column of dark medullary substance growing paler and more slender, and, perhaps, interrupted, down to the point of the conical pulp, which, though smaller, is still distinct, because of the pigment-cells covering its surface. At length the pulp can no longer be discerned, and uncoloured cells alone are produced, and maintain the latest growth of the hair. With these it appears to grow yet some further distance, for we see traces of the elongation of their nuclei into fibres, in lines running from the inner surface of the capsule inwards, and along the surface of the hair; and we can always observe that the column of dark medullary substance ceases at some distance above the lower end of the contracted hair-bulb. The end of all is the complete closure of the conical cavity in which the hair-pulp was lodged, the cessation of the production of new cells from the inner surface of the capsule, and the consequent detachment of the hair as a dead part, which now falls by the first accident—falls, sometimes, quite bare and smooth on the whole surface of its white bulb, but sometimes brings with it a layer of cells detached from the inner surface of the capsule. When its growth is failing, however, there is perceptible, just below the base of the old hair, a dark spot, the germ or young pulp of a new one, covered with cells containing pigment, and often connected by a series of pigment-cells with the old pulp or capsule; and this appears to be the product or offshoot of some portion of the capsule of the old hair; for though it may sometimes appear only in the form of a conical pulp, yet more often, I think, it shows signs of connection with the capsule, and the cone is only more evident than the rest because of its covering of dark cells."

46. *Skin*.—The black colour of the skin of negroes is principally due, according to M. Krause,\* to the nuclei of cells, and not to pigmental cells. The appearance of cells of pigment is owing to agglomerations of small nucleated cells which are easily detached; not only the nuclei of the cells are coloured, but themselves also are brown, though not with pigment. Very few pigment-cells are to be found in the more superficial part of the epidermis.

47. *Skin*.—*Sudoriparous Glands*.—M. Krause† has made an approximative estimate of the number of the sudoriferous glands in the human skin. He finds, in the skin of the forehead, 1258 glands in the square inch, in the palm 2736 in the same space, in the sole of the foot 2685, and in the back of the neck and the back 417.

## § XII. *Histology.*

48. *Histology*.—M. Wertheim's‡ researches into the physical conditions of the tissues of the human body, conducted upon recent subjects whose ages ranged between 1 year and 74 years, lead him to the following conclusions: 1. The specific gravity of tendons, muscles, and veins diminishes with age; that of

\* Handwörterbuch der Physiologie, von Wagner.

† Ibid.

‡ Comptes Rendus, 20 Feb. 1846.

arteries increases by reason of calcareous or other deposit in their walls; that of bones and nerves yields no fixed result in respect of age; but the specific gravity of bones is found to be greater in man than in woman. 2. Osseous tissue elongates in direct proportion to the force it is subject to, just as inorganic matter and wood do; this is not the case with soft parts in their natural state of humidity. 3. When the elastic and permanent elongations become very great, as occurs with vessels, the elastic elongations increase in a much smaller ratio, in consequence, it seems, of the extent of the secondary elongations that it is necessary to add to the primary ones in accordance with the general law. 4. Taking, for the coefficient elasticity of the soft parts, the definition generally adopted for metals, the value of each example is determinable by the resolution of an equation of the second degree. 5. The coefficients of the elasticity of bone, of tendon, and of nerves, appear to augment with age, whilst that of muscle diminishes considerably. 6. The several tissues arranged according to their coefficients of elasticity, or according to their cohesion, yield the following series in each case: bone, tendon, nerve, muscle, vein, artery. 7. The cohesion of muscle diminishes with age. 8. The trunks of nerves have a feebler cohesion than their proximal branches, and these an inferior cohesion to that of cutaneous nerves. So that cohesion appears to augment as diameter decreases. 9. By desiccation the cohesion of all parts is increased.

49. *Ligamentum Nuchæ*.—Mr. Harrison\* has made the very interesting observation that the elastic tissue of the neck in the elephant is connected to the bone of the skull by intermediate tendon, which takes its rise from the ligament as from a muscle. Acetic acid demonstrates the difference of tissue, making the tendon a hyaline pulp, but affecting the yellow fibres very little.

\* *Dub. Med. Press*, March 17, 1847.

## V.

# REPORT ON THE PROGRESS OF MATERIA MEDICA AND PHARMACY.

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1. *On the most Economical Mode of Extracting Iodine from weak Solutions.*—Our readers may recollect that several processes having this object in view were given in our last Report (see Vol. IV. p. 315). None of them were, however, satisfactory. Persoz has been recently applied to for an improved method; and, as iodine is so extensively used in medicine, and its price is increasing, a great point would be gained if we could ascertain the most economic mode of separating it from water containing it naturally, from iodine baths, and, as Persoz also suggests, from the urine of patients who take it internally. Soubeiran proposed to precipitate it by sulphate of copper, to which a certain quantity of iron filings was added, with a view to reduce the periodide of copper to the state of protiodide. Subsequently the protosulphate of iron was substituted for the iron filings.

The irregularity of the results obtained by both these processes must have struck every one who has tried them; it is, therefore, not surprising that a more certain method has been proposed as a substitute. MM. Labiche and Chantrel\* have described one which is based upon the insolubility of the iodide of starch, but which in practice presents a difficulty which these gentlemen seem to have overlooked. It is this: iodine combines with starch only when it is in a free state: it is, consequently, requisite to liberate it from its combinations by means of chlorine, and this presents an insurmountable difficulty.

Having been called upon to examine this question, Persoz found, in the first place, that the protoacetate of iron, substituted for the protosulphate, produces a more rapid reduction; but as it is impossible to reckon upon a regular precipitation of the protiodide of copper, owing to the influence which the respective proportions of the solutions employed exert, he had recourse to sulphurous acid, a powerful reducing agent, and whose action upon the oxide of copper, which it reduces partially to the state of suboxide, was pointed out by M. Chevreul. A few words will suffice to render this kind of reaction intelligible. If 1 grammef of sulphate of copper be dissolved in 150 centigrammes of water, and to this solution 1 grm. of sulphate of soda be added, the liquid acquires a green colour, and becomes turbid. As the formation of a precipitate should be avoided, and at the same time the liquor decolorized, the requisite quantity of sulphurous acid to obtain this double result is added: on letting fall a drop of a solution of iodide of potassium into it, it immediately becomes opalescent, the turbidity goes on increasing, and in the course of an hour a white slightly-pinkish precipitate of the subiodide of copper is formed, which is readily collected by boiling the liquid for a few minutes, and then decanting.

Accordingly, in treating ioduretted waters, sulphurous gas should be passed into them until they exhale a faint odour, in order to convert all the iodine which may exist in the state of iodate into ioduretted hydrogen; then to prevent the formation of the precipitate from the mutual action of the sulphite of soda and the sulphate of copper; and lastly, to cause the reduction of the oxide of copper. For this purpose, therefore, there are successively dissolved in the liquid under treatment 1

\* See my last Report, p. 373.

† The gramme equals 15·4 grains nearly.



part of sulphate of copper and 1 part of bisulphate of soda, calculating approximately the amount of the first for the quantity of iodine supposed in solution, upon the fact that about 3 parts of the sulphate of copper are required for 1 part of the iodide of potassium or sodium. The liquid is then left to itself or boiled, according to whether the precipitate is desired immediately or after a few hours. On letting the precipitate form in conical vessels, it is easy to collect it into a small volume; in every case it is brought upon a filter, washed, dried, and the iodine extracted by one of the known processes. Calcining the protiodide of copper, previously mixed with 2 equivs. of peroxide of manganese, may be successfully employed. The reaction above described, is so readily produced, that Persoz expresses no doubt that in future all ioduretted waters, even the weakest, will be treated by this process; and that it will likewise be successfully employed for the analysis of mineral waters containing bromine and iodine.\*

2. *Syrup of Iodide of Iron*.—The Messrs. Smith of Edinburgh strongly recommend the following mode of preparing this medicine:

Let a solution of iodide of iron be made in a flask with six hundred grains of iodine, two hundred grains of pure iron filings, and six ounces of *cold water*. The action being finished, after smart agitation for a few minutes, let the liquid, while yet hot from the intense chemical action, be boiled over a gas flame or in any other more convenient way till its brown colour has disappeared, which is easily known by the froth becoming white. Let the liquid be now at once filtered through a small filter into a bottle, which has previously been marked, by pasting on its outside a small slip of paper at the level of eighteen fluid ounces, and containing thirteen ounces and a half of refined sugar, broken down into pieces about the size of peas. When the solution has all passed through, which fortunately takes place with unusual rapidity, let the filter be washed with boiling water, a further quantity of which must also be poured into the bottle till the liquid reaches the level of the mark. Let the bottle then be introduced into a hot water-bath and briskly shaken at short intervals, till the sugar is quite dissolved; and having adjusted the level of the syrup to the mark by the addition of water; after again shaking the bottle, let the syrup, without a moment's delay, be bottled into small phials, and secured as much as possible from contact with the air and light, by careful corking, and covering the bottles with some dark-coloured paper. These are the proportions adopted in the Edinburgh Pharmacopœia, and the syrup contains one grain of the iodide in twelve minims, or five grains in one drachm; but as the syrup first proposed by Dr. A. T. Thomson is weaker by two-fifths, containing three grains to the drachm, and which is the strength of the syrup used in England, it is evident that the proportions must be varied accordingly. They will therefore stand thus:—

250 grains iodine  
100 grains iron filings  
2½ oz. cold water  
10 oz. pure sugar.

Let the syrup, when finished, measure twelve ounces and a half, the level occupied by this quantity having been marked off on the bottle beforehand. It is advisable that the bottle used in the preparation of the syrup should not have a capacity more than about a third above the quantity to be made.†

3. *Iodide of Lead*.—It has been long known that when iodide of lead is formed by precipitation of acetate of lead by iodide of potassium, a certain quantity of iodide of lead always remains in solution; in fact, there is about 10 per cent. less iodide of lead than theoretically there ought to be. This is owing to the formation of a double compound, an iodide of lead and potassium remaining in solution. This portion remaining in solution may be thrown down by the addition of a few drops of nitric acid. But the better plan is to prepare it as Boudet advises, by precipitating iodide of potassium with nitrate of lead.‡

4. *Sulphate of Magnesia* has been carefully studied by M. Ladamir Combes,§ especially in relation to the best mode of concealing its bitter taste. After a number of trials, he at last succeeded in effecting this by the simultaneous administra-

\* Journal de Pharmacie, Août 1847.

† Pharmaceutical Journal, Feb. 1847.

‡ Journal de Pharm., Avril 1847.

§ Ibid., Août 1847.

tion of tannine or coffee; the former, however, is the active agent.  $1\frac{1}{2}$  gr. of tannine, when boiled for three minutes with an ounce of the sulphate and about  $1\frac{1}{2}$  pint of water, entirely conceals the taste of the salt. The peculiar astringent taste of the tannine may be removed by the addition of an agreeable aromatic. In roasted coffee we have both the advantages combined. The following are the best proportions:—Take of

Water, about 16 oz.

Powder of roasted coffee,  $2\frac{1}{2}$  drms.

Sulphate of magnesia, 1 oz.

Boil well for two minutes (not in a tinned vessel), remove from the fire, and let the mixture infuse for some minutes, so as to allow time for the development of the aroma; then filter, or merely strain off. It must be sweetened to taste. This fluid does not impart the slightest taste of the bitterness of the sulphate. The salt does not undergo any decomposition by this process.

It should be observed that the infusion is not capable of removing the bitterness, nor will the addition of the salt to the filtered decoction answer the purpose.

Should it be required to increase the amount of the sulphate without augmenting the proportion of coffee, two or three grains of tannine should be added to the boiling decoction. The aroma of the coffee masks the disagreeable taste of the tannine. Orange-flower water is also useful in concealing the flavour of tannine.

5. *Citrate of Magnesia*.—This salt has been made the object of a careful investigation by M. Roger Delabarre, who has also given formulæ for purgative waters made with it. The following extracts are taken from a translation of his memoir\* in the "Pharmaceutical Journal":—

"On making some experiments with the salts of magnesia, I had occasion to observe that the citrate of magnesia is devoid of the bitter and disagreeable taste which characterize the other soluble salts of this base.

"This result, which at first surprised me, appeared less extraordinary, on considering that of all the soluble salts of iron, the citrate is almost the only one which is free from the particular taste that distinguishes the ferruginous salts.

"Experiments founded on these observations led to the conclusion that these facts, so far from being exceptions, may be taken as illustrations of a law which may be thus generalized:—That, of all the salts of any base, the citrate is that in which the taste peculiar to the base is to the greatest extent lost.

"The citrate of magnesia, which forms the subject of this notice, is a salt but little known, being scarcely mentioned by chemists. Liebig, in his *Traité de Chimie Organique*, merely says, 'Magnesia, alumina, and protoxide of manganese form, with citric acid, neutral insoluble salts, which are acid.'

"It may be obtained in two different ways. It may be made by double decomposition from sulphate of magnesia and citrate of soda, or by saturating a solution of citric acid with magnesia or the base carbonate. If it be prepared by saturating a solution, somewhat concentrated, of the acid, the liquor, which is at first liquid and transparent, becomes in an instant a hard mass, adhering strongly to the sides of the vessel in which the combination is affected. This arises, probably, from the water, which at first holds the salt in solution, passing to the state of water of hydration.

"The neutral citrate of magnesia, prepared by either of the processes above described, is a white, pulverulent, insipid salt, soft to the touch, heavier than magnesia, and soluble in water, aided by the addition of a slight excess of the acid. This solution has a slightly acid taste, but is in no way disagreeable.

"Citrate of magnesia may be considered as having the following composition:

1 eq. citric acid . . . . .	2511.25	. . .	55.3
3 eq. magnesia . . . . .	774.00	. . .	17.2
1 eq. water of constitution . .	112.50	. . .	2.5
10 eq. water of crystallization .	1125.00	. . .	25.0
	<hr/>		
	4522.75		100.0

"There is the same quantity of oxygen in the water present as in the acid.

\* The original paper occurs in the *Journ. de Pharm.*, Juin 1847.

"I propose the following preparation for the administration of citrate of magnesia:—

SEIDLITZ WATER FREE FROM BITTERNESS,\*

*Or, Purgative Mineral Water of Citrate of Magnesia.*

No. 1 (mild).

	grammes.	grains.
Citrate of magnesia . . . . .	40 =	617.360
Citric acid . . . . .	2 =	30.868
Simple syrup . . . . .	125 =	1929.252
Essence of orange . . . . .	q.s.	
Water charged with carbonic acid	q.s.	

to fill a common mineral-water bottle, containing 750 grammes (about the size of a wine bottle).

No. 2 (strong).

	grammes.	grains.
Citrate of magnesia . . . . .	50 =	771.701
Citric acid . . . . .	2½ =	38.585
Simple syrup . . . . .	150 =	2315.103
Essence of orange . . . . .	q.s.	
Carbonic acid water . . . . .	q.s.	

for a wine bottle.

"The following is the formula for making 100 bottles of the above, each containing 50 grammes, or 771 grains of the citrate:—

"Dissolve 6 pounds 9 ounces and 364 grains (avoirdupois weight) of crystallized citric acid in 22 pounds of water, and add to the solution 1 pound 5 ounces and 83 grains (avoird.) of calcined magnesia. When the combination has been effected, filter the solution, and add to it 33 pounds (avoird.) of simple syrup flavoured with essence of orange. Distribute this solution in one hundred quart wine bottles.

"Then precipitate 2 pounds 10 ounces and 145 grains (avoird.) of sulphate of magnesia, with a sufficient quantity of carbonate of soda, in the usual way; wash the precipitate, put it into a proper apparatus, with about 90 pints of water, and pass carbonic acid through it until the magnesia is dissolved. This being effected, use the solution thus formed to fill up the bottles into which the previous solution has been put."

The following is the report of Messrs. Renauldin and Soubeiran on the above mineral water:—

The proportion of magnesia in the citrate is sensibly the same as that in an equal weight of the crystallized sulphate, but the former salt is not so powerful in its medicinal effects as the latter, the fifty grammes or 771 grains of citrate contained in the bottle of mineral water, being about equal in effect to thirty or thirty-five grammes (463 or 540 grains) of crystallized sulphate.

Notwithstanding the large quantity of citrate in the mixture, the taste does not at all indicate the presence of any salt; it resembles lemonade in flavour, and acts as a purgative, quite as well as the ordinary Seidlitz water. It certainly affords, from its agreeable taste, a good method of overcoming the repugnance of some patients to purgative medicines. It occasions neither thirst nor tenesmus, and but little pain during its operation; it may therefore be said that it operates safely and agreeably. Our observations would indicate that the proper dose of the salt is forty-five grammes (694 grains) for a man, and forty grammes (617 grains) for a woman.

In the preparation of the magnesia lemonade according to the above formula, the first part of the operation consists in making a citrate of magnesia with excess of acid. In the second part of the process part of the free citric acid is saturated with the carbonate of magnesia, carbonic acid being at the same time set free so as to make it an effervescent water, while there is sufficient uncombined citric acid to give it an acidulous taste.

In the following numbers of the "Journal de Pharmacie," there are remarks both

\* The common *Seidlitz-water*, as made on the Continent, contains sulphate of magnesia.



by Mialhe and Massignon on other and more simple modes of preparing lemonade of citrate of magnesia.

M. Garot recommends the following formula for the preparation of citrate of magnesia:

<b>R</b>	Carbonate of magnesia	15 parts.
	Citric acid	21 "
	Aromatic syrup	60 "
	Water	300 "

The citric acid is separately dissolved and added to the carbonate of magnesia diffused in water. As thus prepared it is not effervescing; but it is easily rendered so by adding only half the quantity of the acid, and reserving the addition of the other half until the dose is taken. The above proportions in grains would constitute a dose.

6. *Tincture of Hops*.—The following improved method of preparing this tincture is given by Mr. Coates.\* The hops, inclosed in a calico bag (as described by Dr. Burton),† and moderately compressed, are placed in a covered shop jar, and the requisite quantity of proof spirit added which will be found sufficient to cover the bag. By placing a piece of tinfoil over the top, provided the lid fit tolerably tight, evaporation will be prevented. After having been macerated the usual time, the clear tincture is allowed to drain off, and the bag, with its contents, transferred to the press. From  $\text{℥xx}$  spt. and  $\text{℥ij}$  hops, he obtained, by using, instead of a press, an ordinary lemon-squeezer,  $\text{℥xiv}$  of tincture, the remaining  $\text{℥vj}$  being absorbed by the hops. He then pours six ounces of water over the bag, and presses out the same quantity, which, presuming the tincture and water to have been equally mixed, will, of course, contain  $\text{℥ij}$  of the former. Six ounces of water are again added to the hops, and pressure employed as before. We have now  $\text{℥xij}$  of liquid containing  $\text{℥ivss}$  tinct. of hops, and  $\text{℥viiss}$  water, the exact quantity required for reducing  $\text{℥xiiss}$  spt. rect. to  $\text{℥xx}$  proof, which may be employed immediately for the next  $\text{℥ij}$  of hops, or placed on one side, properly labelled, till wanted.

7. *Hydrocyanic Acid, to determine the Strength of*.—We insert the following remarks on this subject by Mr. Kendal‡ not so much for their containing anything new in a chemical point of view, as for the extreme importance of the subject, and from our desire that all practitioners should be able to perform for themselves experiments of no intrinsic difficulty, but yet highly important in their results. After noticing the extremely variable strength of this acid as it is ordinarily procured, he proceeds to give the description of his method of testing it. We give the description in his own words, as it will not admit of condensation:

"With respect to the following plan of analysis, I have frequently contrasted it with the more precise method, by ascertaining the weight of the precipitated cyanide, and although in the hands of the skilful manipulator, and when the greatest possible exactness is required, that process is undoubtedly to be preferred, yet, in ordinary hands, and for ordinary purposes, this is quite sufficiently accurate.

"I take a stoppered bottle that will hold 2800 grains of distilled water at 62°, up to about the middle of the neck, which quantity I weigh into it, and mark the level of the water with a file. I then pour out a portion of this water, and weigh into the bottle 177·8 grains of pure fused nitrate of silver; when dissolved, water is poured in up to the mark in the neck. This forms the first solution, every 100 grain measures of which contain 6·35 grains of nitrate, and will be equivalent to 50 grains of Acid Hyd. P. L. or one grain of anhydrous acid. I measure 50 grains of the acid to be examined in a measure graduated to grains of water; I turn it into a  $\text{℥j}$  wide-mouth square bottle, and wash the measure with about 100 grains of water, which is added to the acid. I then measure 100 grains of the test solution, and pour it carefully into the acid. As I find neutralization approach, I drop it in very gradually: during the process it is necessary to stir briskly with a glass rod, which causes the precipitate quickly and perfectly to subside. This is especially necessary towards the close of the operation, when the addition of a drop of the solution merely causes a haziness which prevents the reaction being

\* Pharm. Journ. March 1847.

† Half-Yearly Abstract, Vol. II. p. 334.

‡ Pharm. Journal, April 1847.

seen; but by briskly stirring it becomes perfectly clear. By this means neutralization can be effected with the greatest nicety. Every 100 grains of the test solution exhausted will denote 1 grain, every 10 grains 1-10th of a grain, and every 1 grain 1-100th of a grain of real acid in 50 grains of that under examination; then by doubling the quantity in these 50 grains we of course get the per centage. I keep a bottle in which to preserve the precipitated cyanide until it accumulates sufficiently, when I gain more hydrocyanic acid from it, or reduce it.

"I have been thus minute in the details of this simple process, because I have many times failed in getting a satisfactory result until I did it as above."

8. *Strychnine, on the Mode of Extracting.*—The following method of extracting strychnine is due to M. Molyn,\* and possesses economical advantages over all others that have been yet proposed. It will be observed by the following description that the leading feature of this process is to allow the gummy and saccharine matter of the seeds of the *nux vomica* to undergo decomposition. Carbonic acid is disengaged, while the lactic acid which is produced decomposes the igasurate or strychnate of strychnine and brucine, forming with them very soluble lactates. The following is the mode of proceeding:

Mix nine pounds of *nux vomica* in coarse powder with water, so as to form a thin paste. Keep this at a temperature of from 68° to 78° Fahr. for several days, when fermentation will manifest itself by the disengagement of a large quantity of carbonic acid. The mixture is to be daily stirred, so that the whole of the powder may be exposed to the fermentative process. When the washed seeds are previously boiled for two or three hours, so as more completely to dissolve the gummy matter, the process is abridged. The fermentation is completed in eighteen or twenty days, and is indicated by the cessation of the disengagement of gas. The mixture is then passed through a hair sieve and pressed. The residue is boiled two or three times, according to the quantity of water employed. The liquids are left to become clear by deposition, and are then evaporated to about three gallons. Add nine ounces of quicklime in powder, well stirring the precipitate; let it stand for six or eight hours, then separate the precipitate, and submit it to strong pressure. Heat the liquid to the boiling point, and add a slight excess of sulphuric acid; sulphate of lime is formed, which is allowed to subside, and the supernatant liquor is evaporated to about four pints; to this one ounce of powdered quicklime is added, and the process above described repeated. The precipitate resulting from this process is pressed and added to the former; they are then dried and reduced to fine powder; this powder is digested in about ten pints of proof spirit, with a gentle heat. The spirit dissolves the brucine, the colouring matter, and a little of the strychnine, which may be recovered by evaporating the liquid and allowing it to crystallize. The precipitate, thus freed from brucine and colouring matter, and reduced to powder, is digested at twice in ten pints of spirits of wine, sp. gr. 823. The solutions, which will be nearly colourless, are filtered, and 4-5ths of the spirit recovered by distillation. On allowing the remaining solution to cool and stand for a day, the strychnine will be found at the bottom of the vessel, in the form of a white crystalline powder in a yellowish supernatant liquor. The liquor is to be decanted off, and the strychnine washed with proof spirit, which removes any remaining portion of brucine, and renders it chemically pure by one crystallization.

—In connection with this substance we may remark that a new test has been recently proposed for its detection by Otto, who advises that a *very minute quantity* of a solution of chromate of potash should be used in preference to the brown peroxide of lead recommended by Marchand. On adding this reagent to a solution of strychnine in concentrated sulphuric acid a splendid violet colour is developed, which is far more distinct and beautiful than that produced by the oxide of lead.

9. *Quinoidine.*—The interest that has been attached to the subject of amorphous quinine induces us to insert the following remarks of Dr. Winckler on this subject:†

\* Pharm. Journ., April 1847. Translated from the Journ. de Pharm. d'Anvers.

† Translated in the August Number of the Pharm. Journal, from the Pharm. Central Blatt, No. 20, 1847.

"In the year 1843 the author discovered that commercial quinoidine contained, besides more or less cinchonine and quinine, also a very large proportion of an alkaloid which was apparently in combination with two different, coloured, amorphous, resinous substances. This alkaloid was amorphous, and yielded only amorphous salts; but in other respects it did not differ from quinine, and had exactly the same combining weight as the latter. The author, therefore, recommended it to be purified and employed as amorphous quinine, in the same way as common quinine. He is, however, of opinion, that Liebig (who has recently proved by ultimate analysis, that these two bodies have the same composition) overvalues the importance of quinoidine. Dr. Winckler obtained from eight ounces of quinoidine, only three ounces of pure white amorphous quinine, so that no great pecuniary advantage can be derived from it; whilst, on the other hand, the crude and certainly cheap quinoidine should not be employed, on account of its variable composition, and its liability to adulteration.

"Crude quinoidine having such a variable composition, cannot always be obtained pure in the usual way, by dissolving it in alcohol, ether, acids, &c.; the author tried, therefore, to destroy the foreign substances contained in it, by sulphuric acid of sp. gr. 1.83—1.84, since the latter affects neither the amorphous nor the crystallizable quinine, nor cinchonine. Finely-powdered crude quinoidine was mixed in small quantities with an equal weight of sulphuric acid, so that each portion was separately dissolved before the other was added, an operation not easily performed, since the powder conglomerates almost always as soon as it is thrown into the acid. After the lapse of twenty-four or thirty-six hours, the mixture is copiously diluted with water, and the deep grayish-brown substance which separates during this process is filtered off. The latter, well washed, forms, if dry, a loose amorphous, almost black, not bitter mass (four ounces of the best crude quinoidine gave two drachms of it). To the filtered liquid (which is clear, dark blue, or brown, of an acid and afterwards bitter taste) whilst boiling, crystallized carbonate of soda is added, until a whitish precipitate forms—a dark brown resinous mass having already separated, on the liquid having been saturated with the carbonate of soda. The white precipitate being formed, as much crystallized sulphate of soda is added, as of carbonate of soda used. The mixture is frequently stirred, boiled in the water-bath for about a quarter of an hour, and then allowed to cool. After some time, the thin film of pale yellow, transparent, resinous compound covering the surface having been removed, a somewhat hard, resinous, bitter, almost black substance, often covered with some cinchonine, is found at the bottom of the vessel. The compound which covered the liquid is quinoidine, in a purer state; it is to be placed in the vessel intended to receive the filtered solution, whilst the filtrate is mixed with the required quantity of carbonate of soda for the effectual separation of the alkaloid. The almost white precipitate which had formed dries up, in a few minutes, to a resinous mass, and is now repeatedly washed with hot distilled water. A considerable proportion of quinoidine remains, however, still in the precipitated resinous substance; the same is, therefore, pulverized, and for some time digested with diluted acetic acid of about five per cent., till nothing more dissolves. The filtrate is mixed with sulphate of soda, by which a considerable quantity of an almost black resin separates, which adheres to the sides of the vessel. The filtered fluid, which is of a wine-yellow colour, yields, upon the addition of carbonate of soda, the quinoidine, which is likewise to be washed with hot water, and dried in the water-bath together with that obtained before. The quinoidine thus obtained forms a yellowish-white powder, which becomes electrical by friction, and dissolves perfectly in acid, spirit of wine, and also in ether, in which latter a brown, resinous, bitter substance is precipitated. Four ounces of the best quinoidine furnished thirty drachms of purified quinoidine, whilst very inferior sorts only contained a very small quantity of the same. If quinoidine, as it is obtained in commerce, be dissolved in diluted sulphuric acid (1 part to 3—5 parts of water) purified quinoidine is also obtained by the foregoing method, but the separation of the brown resinous combination takes place imperfectly, and consequently the product is less pure. Still the diluted acid is well adapted for purifying inferior sorts of quinoidine from foreign admixtures, which cannot be dissolved by acids.

Experiments were now made to purify quinoidine by ether. Eight ounces of



a very excellent sort of quinoidine, obtained from yellow cinchona (*cinchona regia*) were mixed with twenty-four ounces of pure ether. The powder immediately conglomerated into a resinous mass, whilst the ether assumed a yellow colour, like gold. The ethereal solution having been poured off after a few days' digestion, was treated with animal charcoal and evaporated: four ounces of a pale yellow, resinous, very bitter residue were obtained. This was converted by the necessary quantity of very diluted pure sulphuric acid into a neutral salt, and the solution evaporated by a gentle heat. Very soon a rather large quantity of pure sulphate of quinine crystallized out of it. This having been removed, no more crystals formed, even by further concentration. The solution was, therefore, again diluted, treated with purified animal charcoal, and the filtrate mixed with the necessary quantity of ammonia for precipitating the amorphous quinine contained in it. The latter separated in the form of a beautiful white precipitate, which, however, soon conglomerated again. It was now washed with distilled water, dried in the water-bath, and then pulverized: the powder weighed twenty-eight drachms, and consisted of very pure amorphous quinine. As that part of the amorphous quinine which had not been dissolved by the ether still tasted very bitter, twenty-four ounces of common ether were again added. This acquired a brownish-yellow colour, whilst the undissolved parts changed into a dark brown liquid of the consistency of treacle. The ethereal solution deposited after some days a considerable quantity of a crystalline mass, and left, by evaporation, about ten drachms of a light yellowish-brown, amorphous, resinous, bitter substance, which, being treated with pure ether, separated into almost colourless amorphous quinine, a considerable quantity of coloured cinchonine, and a deep yellowish-brown, resinous, very bitter compound. When the latter was treated, according to the above-mentioned method, with an equal weight of sulphuric acid, a large quantity of pure amorphous quinine was obtained from it. That part which had remained undissolved, after having been treated with common ether, was dried in the water-bath, triturated, and mixed with diluted acetic acid. By this it was almost all dissolved. On the addition of Glauber salt, however, a rather large quantity of a dark brown substance precipitated from the liquid, which, after being dried, possessed scarcely any bitter taste, and had a grayish-brown colour. The filtered acetic solution yielded, upon the addition of liquid ammonia, a very deep-coloured quinoidine, which gave scarcely any trace of amorphous quinine to ether. The compound which had spontaneously crystallized out of the solution prepared with common ether, was dissolved in spirit of wine of eighty per cent., and the solution, after being decolorized by animal charcoal, was filtered whilst boiling hot. On cooling, a large quantity of cinchonine separated in crystals, and also on further evaporation. At last, a small quantity of alkaloid crystallized in the form of fine white prisms. Its nature was the same as the alkaloid before mentioned by the author under the name of *Quinidine*. The cinchonine thus obtained amounted to three drachms, the quinidine to forty grains. Out of the last proportions of the mother liquor there was also obtained by evaporation, a light brown amorphous mass, from which a small quantity of amorphous quinine could be extracted by concentrated sulphuric acid.

“Although it cannot be denied that good quinoidine contains very much alkaloid, there is still, even in the best qualities, no part of the quinine free. It is always combined with a resinous substance. The amorphous quinine is further accompanied by a light yellow compound, which adheres obstinately to it, and renders the purification very difficult. The brown compound appears to be some red cinchonine, changed by the action of the lime; the yellow compound, however, seems to be a peculiar constituent of the bark. Of ten sorts of saleable quinoidine examined by the author, only three contained a comparatively large proportion of amorphous quinine, five contained but little alkaloid, and two only traces of it; and it is in consequence of this varying composition of the crude quinoidine, that it cannot be recommended for medicinal use. It will, however, be advantageous to free crude quinoidine by diluted sulphuric acid (one part acid of 1.38 specific weight, and two parts water) and by pure ether from the foreign admixture, so that it might represent a preparation of equal chemical composition. If ether containing water and alcohol be employed, a quinoidine of a very different composition is obtained, and even if pure ether be used, it will depend on the chemical

composition of the crude quinoidine whether the result will be a pure amorphous quinine, almost pure white, yellowish, or yellow like gold. In the latter case, part of the colouring matter might be removed by the formation of the neutral sulphate, and by treating it with purified animal charcoal. This, however, cannot be done without considerable loss. This colouring matter probably does not much influence the effect of the preparation. The yellow amorphous quinine becomes brown on the addition of concentrated sulphuric acid, and after some time, if water be added, some brown flakes are precipitated. If yellow amorphous quinine be dissolved in muriatic acid, and an excess of chloride of platinum added, a pure, double quinine salt is formed; but if the filtrate be mixed with sal ammoniac and the solution evaporated in the water-bath to dryness, a yellow salt remains as residue, which contains, besides the platinum-chloride of ammonium, a golden-yellow, not bitter, substance, which is insoluble in ether, but is soluble in anhydrous alcohol, and may thus be isolated."

Coffee has recently been proposed as a good medium for the administration of quinine, in consequence of its destroying the bitter taste. We must warn our readers against this mode of giving it, as an insoluble compound is formed, which lessens, if it does not altogether destroy, the efficacy of the remedy.

10. *Chloroform*.—Just as we are sending this sheet to press, we have received a pamphlet from Professor Simpson on the use of chloroform as a substitute for sulphuric ether in producing insensibility. The interest attached to the subject is such that we offer no apology for drawing pretty largely on the contents of the memoir. We may take this opportunity of stating that, in consequence of the completeness of the Editor's Report on Ether Inhalation in our last Volume, we have not deemed it necessary to notice that subject under the head of *Materia Medica*. After mentioning the different substances with which he experimented, Professor Simpson proceeds to say that he found chloroform infinitely more efficacious than any other, and that he can speak most confidently of its superior anæsthetic properties, having tried it on upwards of fifty individuals. Its utility is illustrated by some singularly striking cases of midwifery and surgical operations, for particulars of which we must refer our readers to the pamphlet itself.

"Chloroform," says our author, "was first discovered and described at nearly the same time by Soubeiran (1831) and Liebig (1832); its composition was first accurately ascertained by the distinguished French chemist Dumas, in 1835. It has been used by some practitioners internally; Guillot prescribed it as an antispasmodic in asthma, exhibiting it in small doses, and diluted 100 times. But no person, so far as I am aware, has used it by inhalation, or discovered its remarkable anæsthetic properties till the date of my own experiments.

"It is a dense, limpid, colourless liquid, readily evaporating, and possessing an agreeable, fragrant, fruit-like odour, and a saccharine pleasant taste.

"As an inhaled anæsthetic agent, it possesses over sulphuric ether the following advantages:—

"1st. A greatly less quantity of chloroform than of ether is requisite to produce the anæsthetic effect; usually from a hundred to a hundred and twenty drops of chloroform only being sufficient; and with some patients much less. I have seen a strong person rendered completely insensible by six or seven inspirations of thirty drops of the liquid.

"2d. Its action is much more rapid and complete, and generally more persistent. I have almost always seen from ten to twenty full inspirations suffice. Hence the time of the surgeon is saved; and that preliminary stage of excitement which pertains to all narcotizing agents, being curtailed, or indeed practically abolished, the patient has not the same degree of tendency to exhilaration and talking.\*

"3d. Most of those who know from previous experience the sensations produced by ether inhalation, and who have subsequently breathed the chloroform, have

\* "In practice I have found that any such tendency, even with ether, is avoided by, 1st, giving the patient from the first a large and overwhelming dose of the vapour, and 2dly, by keeping him perfectly quiet and still, and preventing all noise and talking around him. I have elsewhere insisted on the importance of these points."

strongly declared the inhalation and influence of chloroform to be far more agreeable and pleasant than those of ether.

"4th. I believe, that considering the small quantity requisite, as compared with ether, the use of chloroform will be less expensive than that of ether; more especially as there is every prospect that the means of forming it may be simplified and cheapened.

"5th. Its perfume is not unpleasant, but the reverse; and the odour of it does not remain for any length of time obstinately attached to the clothes of the attendant,—or exhaling in a disagreeable form from the lungs of the patient, as so generally happens with sulphuric ether.

"6th. Being required in much less quantity it is much more portable and transmissible than sulphuric ether.

"7th. No special kind of inhaler or instrument is necessary for its exhibition. A little of the liquid diffused upon the interior of a hollow-shaped sponge, or a pocket handkerchief, or a piece of linen or paper, and held over the mouth and nostrils, so as to be fully inhaled, generally suffices in about a minute or two to produce the desired effect.\*

"Chloroform may be made and obtained artificially by various processes,—as by making milk of lime, or an aqueous solution of caustic alkali, act upon chloral; by distilling alcohol, pyroxylic spirit, or acetone, with chloride of lime,—by leading a stream of chlorine gas into a solution of caustic potash in spirit of wine, &c. The preparation which I have employed was made according to the following formula of Dumas:

" R—Chloride of lime in powder	iv lb.
Water	xij lb.
Rectified spirit	f. 3xij.

"Mix in a capacious retort or still, and distil as long as a dense liquid, which sinks in the water with which it comes over, is produced.†

"The resulting chloroform or perchloride of formyle consists of two atoms of carbon, one of hydrogen, and three of chlorine. Its specific gravity is much greater than that of water, being as high as 1.480. It boils at 141°. The density of its vapour is 4.2. It is not inflammable; nor changed by distillation with potassium, potash, sulphuric, or other acids."

11. ADULTERATIONS OF DRUGS.—*On the Detection of Guaiacum Resin in Resin of Jalap or Scammony.*—It has long been known that chlorine possesses the property of rendering guaiacum resin blue. It has been shown by Smedt‡ that the chlorides of soda and lime also possess this property, and may be used for detecting the smallest traces of this resin when mixed with resin of jalap. In fact, two grains of a mixture of fifteen parts of resin of jalap and one part of guaiacum resin dissolved in f. 3j of spirit, specific gravity 825, gives, on the addition of a single drop of solution of hypochlorite of soda (chloride of soda), a green streak, which is deposited as a precipitate at the bottom of the glass, leaving the supernatant liquor of its original colour.

The sensibility of this reaction is such, that the presence of one part of guaiacum resin in 320 parts of resin of jalap may be indicated.

Boudet§ has found that this test may be applied with equal advantage for detecting the presence of guaiacum resin in scammony.

12. *Adulteration of Mustich.*—It is observed by Landerer that the adulteration of this substance with olibanum, sandarac, and similar substances, is well known;

\* "When used for surgical purposes, perhaps it will be found to be most easily given upon a handkerchief, gathered up into a cup-like form into the hand of the exhibitor, and with the open end of the cup placed over the nose and mouth of the patient. For the first inspiration or two, it should be held at the distance of half an inch or so from the face, and then more and more closely applied to it. To ensure a rapid and perfect anæsthetic effect—more especially where the operation is to be severe—one or two teaspoonfuls of the chloroform should be at once placed upon the hollow of the handkerchief, and immediately held to the face of the patient. Generally a snoring sleep speedily supervenes; and when it does so, it is a perfect test of the superinduction of complete insensibility. But a patient may be quite anæsthetic without this symptom supervening."

† Gray's Supplement to Pharm., 1846, p. 633.

‡ Journ. de la Société de Pharm. d'Anvers.

§ Journal de Pharmacie, Nov., 1847.



but that for several years, during which the mastich crops have been scanty in Chios, it has been adulterated with sea-salt. He met with some exposed for sale at Athens, containing sixteen per cent. of this substance, and which presented no peculiarity of appearance.

13. *Adulteration of Olive Oil.*—M. Diesel\* has given the following mode of ascertaining whether olive oil has been adulterated with rape or poppy oil. Pure olive oil is coloured green by ordinary nitric acid. On the other hand, 1 drm. of olive oil, sophisticated with rape oil and mixed with 12 drops of nitric acid, exhibited a strong yellowish-gray colour. Comparative experiments with various mixtures of oil showed that this reaction was still perceptible even with the addition of one-tenth. The adulteration with poppy oil is likewise easily detected with nitric acid, but the mixture then becomes yellowish-white, and not brownish, as in the previous case. Pure nitric acid exhibits the reaction in a far less degree. Dr. Bley adds, that the samples must be judged of in the course of twelve hours after the addition of the nitric acid, as pure olive oil is likewise coloured more or less brown after a longer interval.

14. *The Action of Nitrate of Silver on the Liquids and Solids of the Body* has been investigated by Keller.† The use of this salt as an external application in affections of the mucous membranes of the eye and of the generative organs is generally allowed. These effects, says our author, are easily explained by the property which the salt possesses of destroying the vitality of the parts with which it comes in contact. Further, it decomposes the chloride of sodium and the soluble phosphates, so that there are formed two insoluble salts, the chloride and phosphate of silver. The frequent application of this salt to the epithelial cells of the mucous membranes not only causes their rapid separation, but also their rapid and abundant reproduction.

The mode of action of the salt, when taken internally, is not by any means so clear. From seven experiments, in which the blood, urine, and fæces of patients who had taken large doses (3 to 12 grains daily) for some months were examined, he was led to the conclusion that the whole was removed, in the form of chloride of silver, with the fæces. From a direct examination of its action on the gastric juice, he concludes that the whole is at once converted into chloride of silver, and consequently that no portion enters the circulation; he even goes so far as to regard the well-known change of colour as merely fortuitous. We need hardly state that the coloration in these instances is too certain to be doubted; we have far better evidence of its truth than that of Keller's accuracy. That the quantity entering the blood is *extremely* small, we do not doubt. In fact, similar experiments were made some time ago by Heller, with the same results.

15. *On the Purgative Action of Scammony and Jalap.*—From a series of 210 experiments instituted by M. Willemin.‡ in Rayer's wards, he came to the following conclusion. (The scammony used in these experiments was previously analyzed by Quevenne, and the resin was found to vary from 69 to 82 per cent.)

1st. Aleppo scammony (of good quality), in a dose of 16 grains, usually procures three or four evacuations.

2d. There is no danger in raising the dose to ℥j or gr. xxiv: the purgative effect is not increased, and is often less than that produced by 16 grains.

3d. The administration of the medicine with an acid, or the use of an acid drank afterwards, has no apparent effect.

4th. The addition of an alkali does not render the action more energetic.

5th. The *resin of scammony*, in a dose of eight grains, produces about the same purgative effect as 16 grains of scammony. The administration of 16 grains is followed by less active purgation, which diminishes still further on raising the dose to ℥j, or gr. xxiv.

6th. The resin of scammony is more liable to excite a sensation of heat in the stomach and about the anus, than that of jalap.

7th. The resin of scammony, in a dose of eight grains, is an excellent purgative. As we cannot foretell the amount of resin in the scammony of commerce, the resin itself is much to be preferred medicinally.

\* Archiv. der Pharm., as translated in the Chem. Gaz., 101.

† Journ. de Pharm., Dec. 1846.

‡ Archives Gén. de Méd., Août, 1847.

8th. The resin of jalap, in a dose of eight grains, purges as effectually as a similar quantity of resin of scammony.

16. During the past year we have received many highly important contributions to the *Materia Medica*, which it is entirely out of our power—in fact, out of our department—to attempt successfully to analyze in a brief report, which is confined for the most part to strictly practical matter. Amongst the most valuable of these we may mention:—

On the Fruit of *Amomum Meligneta*. By Jonathan Pereira,\* M. D., F. R. S.

On *Alcornoque Bark*. By Jonathan Pereira,† M. D., F. R. S.

On the Cardamoms of Abyssinia. By Jonathan Pereira,‡ M. D., F. R. S.

On the same subject. By C. F. Beke.§

Researches on Yellow Cinchona. By M. A. Gulliermond.||

On the Occurrence and Geographical Distribution of the Genuine Cinchona (*Cinchona Condaminea*), and of other Cinchona Species in the neighbourhood of Loxa. By Dr. Von Martius.¶

On the Astringent Juices known as Catechu, Gambor, and Kino. By M. Guibourt.\*\*

On Gutta Percha. By M. Soubeiran.†† (For a botanical character of the plant yielding it, we may refer to a paper by Sir William Hooker, in the October number of the "*Pharmaceutical Journal*." )

Dr. Hamilton has continued his series of original contributions to the "*Pharmaceutical Journal*." They embrace the consideration of—

1st. Some Species of the Genus *Amyris*.

2d. The Lemon Grass, or *Andropogon Schœnanthus*.

3d. The *Hymenæa Courbarii*, or Locust Tree.

4th. The properties of the *Bocconia Frutescens* and *Clusia*.

5th. The *Canna Achera*, or Tous les Mois.

6th. The medicinal and economic properties of the *Sapendus Saponaria*, Soap Berry, or Black Nickar Tree.

MM. Soubeiran‡‡ and Bouchardat have published an excellent memoir on the choice, mode of preserving, and cleansing of Leeches.

—We have also had some excellent memoirs on the state of Pharmacy in different countries. We may especially direct the attention of our readers to memoirs on the present state of Pharmacy in Africa, by Landerer, and its present state in England, by Professor Rose; also to a series of papers, by (we believe) the Editor of the "*Pharmaceutical Journal*," on the past history and present state of Pharmacy in Belgium, America, Denmark, China, Spain, and Russia.

17. EXTERNAL APPLICATIONS.—On the Preparation of Pencils of Nitrate of Silver and Potash.—By Gassicourt.—Mix nitrate of silver and nitrate of potash, and fuse them in a silver or platinum crucible; stir from time to time with a glass rod. As soon as the mixture is in a state of quiet fusion, pour it into a mould previously heated and oiled, in order to prevent the nitrate adhering to its walls. When the nitrate has solidified, the mould must be opened, and the cylinders removed, wiped, and laid up for use. §§

18. *A New Blistering Tissue* has been recommended by Gacoste. |||—The following is the formula for its preparation:

Black pitch, purified . . . . .	125 parts
White wax . . . . .	30 "
Cantharides in fine powder . . . . .	60 "
Essence of turpentine . . . . .	15 "
Olive oil . . . . .	8 "

The pitch is purified by melting it in a dish, and straining it through a close piece of linen.

The pitch, thus purified, is melted, in an earthen vessel over a gentle fire, with

\* Pharm. Journ., March. † Ibid., Feb. 1847. ‡ Ibid., April. § Ibid., May.

|| Journ. de Pharm., June 1847. ¶ Büchner's Repertorium, vol. xlv., No. 3.

\*\* Journ. de Pharm., Jan., Avril, Mai, Juillet, Sept. et Oct. 1847.

†† Ibid., Jan. 1847.

‡‡ Ibid., Mai 1847.

§§ Desmarres' *Traité des Maladies des Yeux*, page 224, note. See page 272 of Mr. Ansell's Report on Ophthalmic Surgery.

||| Journ. de Pharm., Sept. 1847.

the wax; the cantharides, the oil, and the essence of turpentine are then added; when the mixture is well stirred, a small quantity of the plaster is thrown into cold water and kneaded; if it be neither too soft nor too brittle, it is then spread on the glazed side of some oil-cloth with a plaster-iron slightly heated.

The quantity of wax, oil, and essence may be varied according to the quality of black pitch employed, so as to give the plaster a consistence suitable for its being spread on cloth. Copper vessels should never be used for preparing those medicinal compounds of which wax is an ingredient; the plaster should be melted in a glazed earthen vessel. The cantharides are added by means of a sieve, so as to divide the particles, and prevent their collecting into lumps. It is convenient in sending out the blistering cloth, to cut a piece of oiled paper of the same size, and lay this over the surface of the plaster, to prevent its adhering to the envelope.

These vesicatories should never be camphorated with a solution of camphorated ether, but rather with camphor finely pulverized, and for this purpose the blistering-cloth should previously be slightly warmed.

Of all the formulæ published for blistering-plaster, there are none more easy in application, and that will keep in a better state of preservation than this.

19. *Ammonia*, as a vesicant, has, at different times, been recommended in various forms of application. Mr. Schacht,\* of Clifton, has recently described the following mode of using it:

If six drops of a liniment consisting of one drachm of the liq. ammon. fortiss., and two drachms of olive oil, are applied to the woollen side of Markwick's impermeable piline, and this is gently pressed upon the skin with a handkerchief, we shall have, in the course of ten minutes, a perfect blister as large as a crown-piece.

Boudet has contributed a memoir on this subject, in which, after reviewing the processes hitherto recommended (one of which, that of M. Boniface, closely resembles that of Mr. Schacht), he gives a very decided preference to that of Dr. Tonnelé, of Tours. The method consists in putting some of Gondret's ammoniacal pommade in a small plated tin cup, applying it to the skin for 10 or 12 minutes, and then rubbing the skin with a rather rough cloth, so as to detach the epithelium. This method prevents the escape of ammonia, and causes the vesication to be both sure and rapid. Care must be taken, however, that the edges of the cup are in close contact with the skin; this may be always effected by a luting of soft wax. The whole must be fastened by a band or riband. It may happen that Gondret's pommade is not at hand, and as its preparation requires nearly an hour, Boudet proceeds to consider the best mode of applying liquid ammonia in such cases. Two conditions are requisite in order to ensure its action as a vesicant. 1st We must use a solution of ammonia of specific gravity .906, and not of .923 [*à 25° et non pas à 22°*]; and, 2d, steps must be taken to hinder its evaporation during the operation.

The latter condition is best satisfied by placing on the part which it is intended to affect, four or five layers of blotting paper, well soaked in the ammoniacal solution, and covering it in the manner already recommended for the pommade.

This method of vesication is well adapted for the endermic application of the salt of morphia, and other medicines.

20. Amongst other external applications we may notice the following mode of preparing opodeldoc, or soap-liniment, as recommended by Dünhaupt:†

In order to obtain pure opodeldoc, he puts dry scraped soda-soap, and camphor into a glass bottle, half filled with highly rectified spirit of wine. The bottle is placed in hot water, the cork now and then a little loosened, and the soap dissolved by shaking. The volatile oils and solution of caustic ammonia are then added, and the whole shaken until a cloudy mass precipitates, and the solution appears clear. This turbid matter effects, by shaking, the clarification in the same manner as the white of eggs. The solution is then quickly filtered through a piece of linen, which retains the cloudy fluid, and the well-closed vessel containing the filtered liquid is placed in hot water until the opodeldoc becomes as clear as wine,

\* Pharmaceutical Journal, Feb. 1847.

† Pharm. Journ., July 1847; from the Pharm. Centrall Blatt.



upon which the vessel is removed into very cold water, in order to cool the contents as speedily as possible.

21. We likewise give Menier's\* prescription for *Le baume tranquille*, which is, we believe, employed extensively in France as an external application in rheumatism, &c.:

R	Fresh leaves of belladonna,	}	āā 125 grammes.
	“ “ hyoscyamus,		
	“ “ dulcamara,		
	“ “ tobacco,		
	“ “ stramonium,	}	āā 32 grammes.
	White poppies.		
	Dried heads of hyssop,		
	“ “ millepertuis,		
	“ “ elder,	}	āā 8 grammes.
	“ “ sage,		
	Volatile oil of wormwood,		
	“ “ lavender,		
	“ “ marjoram,	}	āā 8 grammes.
	“ “ mint,		
	“ “ rue,		
	“ “ thyme,		
	“ “ rosemary,	}	
	Olive oil, 3 kilogrammes.		

These numbers are very nearly in the proportion of 16, 4, 1, and 425.

The narcotics are first bruised in a mortar; they are then boiled with olive oil in a copper vessel, over a small fire; the dried heads are then thrown in, and when the water contained in the plants is expelled, the whole is allowed to cool. It is then strained in a press, and the volatile oils are finally added.

22. Amongst the best works that have appeared during the past year on the subjects of which this Report treats, we may especially mention new and enlarged editions of Trousseau and Pidoux's "Treatise on Therapeutics and Materia Medica," and Soubeiran's "Treatise on Pharmacy." Mohr has published (in German) a "Treatise on Practical Pharmacy," and we are happy to find that an English translation, with copious additions, will shortly appear from the pen of Professor Redwood. Mohr is also publishing a "Commentary on the Prussian Pharmacopœia," of which, as far as it has yet appeared, we can speak favourably. A series of lectures on Materia Medica, by Dr. Roupell,† is now in the course of publication; as far as we can judge from those that have already appeared, the arrangement seems extremely simple and judicious. We shall return to them in our next Report, when the course is completed.

We have also received a copy of the fourth edition of Mr. Beasley's useful compendium of the British and Foreign Pharmacopœias,‡ the additions to which, as respects the doses of the more recent and active medicines, render it a very complete work.

\* Journ. de Pharm., Feb. 1847.

† In the Medical Times.

‡ The Pocket Formulary and Synopsis of the British and Foreign Pharmacopœias, &c.

## VI.

# REPORT ON THE PROGRESS OF PUBLIC HEALTH.

BY WILLIAM A. GUY, M.B. CANTAB.

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SINCE the publication of the analysis of that part of the Report of the Health of Towns Commission which refers to the metropolis,\* many valuable contributions have been made to that portion of medical and popular literature which refers to the prevention of disease and the preservation of health, especially in our large towns: a new sanitary commission has been appointed for the metropolis; and the legislature has passed some important practical measures. A comprehensive measure of sanitary reform is, however, still a desideratum, and is anxiously looked for at the hands of the government. In the present state of the sanitary question, it would seem desirable to restrict this abstract chiefly, but not exclusively, to matters bearing directly on that question as it is generally understood in England,—to the state of the public health during the past year, the condition of our large towns and populous places, the leading remedial measures, and the march of legislation,—disregarding for the present many questions of scientific interest, but of secondary practical importance, which are occupying the attention of our continental neighbours, and postponing for another year that complete and minutely arranged abstract, that will ere long be demanded and justified by the rapid progress of the science of hygiene which must follow on the enactment of a large measure of sanitary reform, and the appointment in every town and populous district of medical officers of health and competent surveyors. The first subject which naturally demands attention is the state of the public health during the period embraced in this Report.

### § I.—*State of the Public Health in the Year ending Sept. 1847.*

The year 1846 was marked by a higher mortality than any of the eight complete years embraced in the Reports of the Registrar General.† When measured by the very moderate standard of 2 per cent., the excess of mortality in the twelve-month ending June 1847 amounts to no less than 66,712! in one-fourth part of the population of the United Kingdom; that is to say, in the registration districts of England and Wales comprised in the quarterly returns. The total number of deaths registered in the 117 districts of England and Wales comprised in these valuable records was 192,104, which exceeds by 20,000 deaths the number registered in the unhealthy year 1840. By adding the last quarter of 1846 to the first three quarters of 1847, and proceeding in the same manner with previous years, it appears that of the eight years thus commencing with October and ending in September, the year 1846-7 is by far the most unhealthy, for while the total number of deaths in 1845-6 was 178,332, that in 1846-7 amounted to no less than 210,262, being an excess of 31,930. There has been, in fact, a progressive increase of mortality from 1842-3 to 1846-7, just as from 1839-40 to 1841-2 there had been a progressive decrease. The mortality in the last quarter of 1845 very slightly exceeded the minimum in the same quarter of previous years, and the first quarter of 1846 was below the average. It was with the second quarter of that year that

\* Half-yearly Abstract, Vols. III. and IV.

† See a table in the return for the quarter ending Sept. 30, 1847.

the great increase of deaths first showed itself, the number (43,734) exceeding by nearly 1700 that registered in 1840 (42,074). The deaths in the third quarter of 1846 exceeded by nearly 12,000 the deaths for the corresponding quarter of 1840; while those for the last quarter of 1846 were in excess over the corresponding quarter of 1840 by nearly 9000. An increase to a somewhat larger extent characterizes the first and second quarters of 1847, and it is not till the third quarter of the present year that any decrease is perceived. The number for this quarter is 49,479, which exceeds by about 10,000 the mortality of 1840, but falls short of that for 1846 by nearly 2000. These details will be rendered more intelligible by the following table:—

Quarter ending	December 1845	39,321
"	March 1846	43,850
"	June "	43,734
"	September "	51,427
"	December "	53,093
"	March 1847	56,105
"	June "	51,585
"	September "	49,479

The amount of sickness was, probably, proportionably greater than the mortality. Fever, for instance, though extremely prevalent, was not so fatal as in most previous epidemics, except where it attacked the higher and middle classes. Catarrhal affections were also in great excess, and scurvy, and diseases accompanied or characterized by discharges of blood, have been unusually frequent. Melæna was more frequently superadded to diarrhœa than the writer ever remembers to have observed in former years, and attacks of hæmatemesis, hæmaturia, and epistaxis were of frequent occurrence. The year 1846-7 has, therefore, been characterized both by a high mortality and a great prevalence of sickness—conditions which are by no means inseparable.

The deaths for the whole of England and Wales during the years 1845 and 1846 were not made up at the end of 1846, but a calculation has been made of the probable number in each of those years. The following table displays the total number of deaths in England and Wales for each of the years from 1838 to 1846 inclusive (the last two being estimates):—

1838	342,547	1843	346,446
1839	338,979	1844	356,950
1840	359,634	1845	352,000
1841	343,847	1846	406,000
1842	349,519		

The chief causes of the great mortality of 1846-7 are the high price of food, and the increase of fever imported from Ireland by an immigrant population of persons in the extreme of destitution. The increase of deaths in the 117 registration districts of England and Wales is not, therefore, to be attributed solely to an excessive mortality of their own proper inhabitants, but to the addition thus made to the resident population. This scourge fell with full weight on the town of Liverpool, but afflicted more or less other sea-ports and populous places accessible to these miserable hordes, and offering the temptation of private charity or a liberally dispensed poor-law. The metropolis was subject to a great increase of mortality, and the same remark applies to Liverpool, Manchester, Salford, and Chorlton, Birmingham, Dudley, Wolverhampton, Shrewsbury, Leeds, Hull, York, and Sunderland. The chief increase of mortality took place under the head of smallpox, measles, scarlatina, diarrhœa, cholera, dysentery, remittent fever, typhus fever, and erysipelas; in a word, from the zymotic class generally. There was also an increase of deaths ascribed to privation. The mortality of Liverpool in the summer quarter of 1847 was nearly double that of the corresponding quarter of 1846, and almost treble that of previous years. No other town presents so fearful an increase. The Registrar-general, speaking of this fever-stricken city, uses the following striking language: "Liverpool, created in haste by commerce—by men too intent on immediate gain; reared without any very tender regard for flesh or blood; and flourishing, while her working population was rotting in cellars, has been severely taught the lesson that a part of the population, whether in cellars or on distant



shores, cannot suffer without involving the whole community in calamity." In itself one of the unhealthiest towns in the kingdom, Liverpool has for a year been the hospital and cemetery of Ireland. The deaths registered in the four quarters of 1846 were 1934, 2098, 2946, and 2735; in the three quarters of 1847, ending in September last, 3068, 4809, and 5669! The short notes of the registrars represent most correctly and vividly the piteous spectacle which this great town presented, with the floating lazarettos on the Mersey, the workhouses crowded with destitute paupers, the three large sheds, which will hold 300 persons, nearly full of patients at the same time, and the fever "getting more prevalent among the upper classes." There is too much reason to fear that the decrease of mortality which has begun to show itself in the third quarter of 1847 will be but a temporary mitigation of a great calamity; for though provisions are more plentiful and cheap, large numbers of working men are being thrown out of employment, the Irish immigration has not ceased, and there is too much reason to fear that the money, so much wanted at home, will be again wasted on the exaggerated necessities of the sister kingdom. Should the winter prove severe, a great increase of mortality both in England and Ireland will inevitably take place. The influenza has already proved extremely fatal, and is but too likely to be aided in its work of destruction by the cholera.

### § II.—*Health of the Metropolis.*

The deaths registered in the September quarter of 1847 were 13 187, the numbers in 1845 and 1846 being 10,987 and 12,601 respectively. Excluding violent and sudden deaths, and adding the last quarter of the year 1845 to the first three quarters of 1846, and the last quarter of 1846 to the first three quarters of 1847, we obtain results nearly in conformity with those for the 117 districts of England and Wales. The year 1847 exhibits an increase of deaths for the first three quarters, and the returns for the first weeks of the fourth quarter also exceed the average. The week ending Nov. 27 shows an increase of nearly 700, while that ending Dec. 4 is twice the average. This remarkable increase corresponds with an unexampled epidemic of influenza. The number for the year 1845-6 was 45,787, and for 1846-7, 51,742.

The Registrar-general, in his recent quarterly reports, has devoted much space to the mortality of the metropolis, and the comparison of its several districts with more healthy standards. In the first Annual Report for 1839, the mortality in 32 districts of London was calculated, and it was shown that, in 1837, the mortality increased from 18 in the healthiest districts, to 32 and 39 in the crowded poor districts, and the general principle was established, "that the mortality has a tendency to increase as the population increases, but that the unhealthful tendency can be counteracted by artificial agencies; in other terms, that the mortality of cities in England is high, but that it may be immeasurably reduced." As, however, the calculations in the earlier reports relative to London were partly derived from the census returns of 1831, from which the ages of the living were omitted, so that the mortality at different ages could not be determined, the above conclusions were still open to doubt. The census of 1841 has supplied all the elements of correct and unexceptionable calculations, and enabled the Registrar-general to display, in a very striking and convincing manner, the unhealthiness of the metropolis, and the consequent necessity for a good and efficient sanitary measure. In the report for the quarter ending March 31, 1847, a comparison is made between the mortality of London and that of Lewisham (the most healthy registration district of the metropolis) in the seven years, 1838-44. The number of deaths under 5 years of age, from 5 to 25, from 25 to 65, and at 65 and upwards, for London and Lewisham respectively, are given in a table, from which it appears; that the actual number of deaths in London, under 5 years, was 139,593, but that if the mortality had been the same as in Lewisham, it would have been only 80,632, so that, in the short space of seven years, there was an excess of deaths by causes peculiar to London, of 58,961, or 8423 a year. In the interval from 5 to 25, the actual number of deaths in London was 40,828, which exceeded the number that would have happened if the mortality had been at the same rate as in Lewisham, by 5122 deaths, or 731 deaths in the year. The period from 25

to 65 exhibits a larger excess, the deaths in London numbering 109,126, which at the Lewisham rate would have been only 83,447; or less by 25,679, being 3668 a year. At 65 and upwards, the actual mortality in London was 52,453, the Lewisham rate would have given 44,343; so that the excess was 8110, or 1158 a year. The total number of deaths at all ages for the seven years was 342,000, or about the annual mortality of the whole of England and Wales; the deaths which would have happened at the Lewisham rate are 244,128, and the total excess in London for the seven years, above a healthy standard, 97,872. This number divided by seven, gives an annual sacrifice of 13,981, or very nearly 14,000 lives. So that, to use the forcible language of the report, "the plain fact is that, one day with another, 134 persons die daily in London; that the great majority are untimely deaths—children, fathers, mothers, in the prime of life; and that at least 38 die daily in the excess of the rate of mortality which actually prevails in the immediate neighbourhood."

The high mortality which prevails in the metropolis is further illustrated in the return for the quarter ending Sept. 30, 1847, by comparing the deaths which took place in that quarter with those which would have happened if the mortality had been at the same rate as that which prevailed in the county of Dorsetshire, in the September quarters 1838-44. The deaths registered in London under 15 years of age, in thirteen weeks ending Sept. 25, 1847, were 6534; the rate in Dorsetshire during the period referred to would have given 3078, or considerably less than half that number; so that, measured by this standard, there was an excess of deaths in London of 3506. From 15 to 35, the deaths in London were 1786, which, at the rate prevailing in Dorsetshire, would have fallen to 1709, being an excess of 77 deaths. From 35 to 55, the deaths in London amounted to 1983; the Dorsetshire rate of mortality would have given 1367, showing an excess of 616 deaths. The deaths at 55 and upwards, were in London 2834; they would have been, at the rate for Dorsetshire, 1955, giving an excess of 879 deaths. The total deaths in the quarter amounted in London to 13,187. If the same rate of mortality had prevailed as in Dorsetshire, they would have been reduced to 8109. So that in the quarter ending Sept. 25, 1847, there was an excess in London above a healthy standard, of no less than 5078 deaths. These facts are thus summed up in the report:—"3506 children under 15 years of age were destroyed in London, in addition to 3078 carried off by causes which may be supposed to be the same as those fatal in the country. The mortality is equal at the age 15-35, when London receives healthy recruits from the various counties. After the age of 35, the mortality is 45 per cent. higher in London than in Dorsetshire. If the chance that a man above 35 will die in the country during the summer quarter be represented by 2, the chance that he will die in London is nearly 3." It would have been more satisfactory to compare the deaths in London with those in Dorsetshire, for the same quarter of the same year. The mortality of London is evidently exaggerated by thus contrasting a notoriously unhealthy year with the more healthy average of 1838-44. There is no doubt, however, that in any case London would be found to exhibit a very large excess of mortality.

As objection may be fairly taken to a comparison of the mortality of London with that of Dorsetshire, or even of the comparatively healthy registration district of Lewisham, it may be well to show what the excess of deaths in the same seven years, 1838-44, would have been, if the acknowledgedly moderate standard of 2 *per cent.* were substituted for the rate of mortality prevailing in Lewisham registration district. The population of the metropolis on July 1, 1841, was 1,950,526, and the deaths in the seven years, of which 1841 is the middle term, were 342,000. A calculation founded upon these data gives an excess of deaths in the seven years, over and above 2 *per cent.* of 78,172, being at the rate of no less than 11,167 a year. So that even at this very moderate rate of calculation, the sacrifice of life in London reaches an appalling magnitude.

The relative mortality of different parts of the metropolis is also carefully investigated by the Registrar-general, and as this too is a matter of great importance at the present time, a brief notice of the results is here given. The city of London has been labouring under the strange and unaccountable delusion that "for *health*, cleanliness, effective drainage, lighting, and for supply of water to its inhabitants, it cannot be surpassed." This registrar-general has felt it to be his bounden duty

to rectify this mistake, as far as the health of the city is concerned, by stating that, in the city without the walls, out of 13,631 deaths recorded in seven years, upwards of 5000 would have been prevented if this delusion had been a fact. The late Dr. Lynch has the merit of demonstrating that in the Ward of Farringdon Without, the unsurpassed cleanliness, drainage, lighting, and water supply were much more imaginary than real. In the same report the equally unfounded pretensions of Marylebone and Brighton, so forward in their opposition to sanitary measures, are refuted, by a comparison with the mortality of East Grinstead, Horsham, and Cuckfield, from which it appears that out of 1000 males, Marylebone and Brighton lose 25, and these more healthy districts only 17 every year, while Marylebone loses 20, Brighton 19, and the other districts only 17 in the thousand females.

The place occupied in the sanitary scale by the several districts of the metropolis, is well shown in a table marked C, in the report for the quarter ending March 31, 1847. The several districts are arranged in the order of the mortality of females at all ages, the healthiest districts being placed first. The table is founded on the population returns of 1841, and the deaths registered in the seven years, 1838-44. The results are best displayed in the following table:—

1. Lewisham and St. George, Hanover square . . . . .	16	per thousand.
2. Hampstead, Hackney, and Camberwell . . . . .	17	“
3. Wandsworth and Islington . . . . .	18	“
4. Kensington, Chelsea, City of London, St. James, Westminster, and Marylebone . . . . .	20	“
5. Paneras, Newington, and Poplar . . . . .	21	“
6. Lambeth and Greenwich . . . . .	22	“
7. St. Martin-in-the-Fields, Stepney, Clerkenwell, Bethnal Green, and Holborn . . . . .	23	“
8. Strand and Shoreditch . . . . .	24	“
9. Westminster, Bermondsey, Rotherhithe . . . . .	25	“
10. St. Giles, and St. George, Southwark . . . . .	26	“
11. St. George-in-the-East, St. Saviour. St. Olave, and St. Luke . . . . .	27	“
12. East London, West London, and Whitechapel . . . . .	28	“

If the relative salubrity of the several districts were measured by the less accurate standard of the mortality of males, or by the deaths in either sex, or in both sexes, under 5 or above 65, a different result would be obtained. The table gives the means for either of the comparisons now referred to.

### § III.—Condition of Large Towns.

The degree to which a nation may be ignorant of its real condition, in matters which affect the health and lives, the comforts and well-being, physical and moral, of the people, has never been more strikingly displayed than in the Reports of the Health of Towns Commission, and in those local reports which are constantly issuing from the press. The inquiries of the commission into the sanitary state of fifty of the largest towns of England and Wales, where the mortality was the greatest—towns including the great seats of manufacture, and the three greatest ports after London, and comprising a population of upwards of 3 000,000 persons—showed that, in the three leading requisites of drainage, cleansing, and water-supply, the great majority were in a most disgraceful condition. The drainage was reported to be scarcely good in 1, indifferent in 7, and bad in 42; the cleansing was nearly the same: and the water-supply good in 4, indifferent in 7, and bad in 39. Such being the summing up of the evidence, it is not difficult to imagine the items of which it consists. Those which refer to the metropolis have been already briefly noticed. (Abstract, Vols. III. and IV.) It would have appeared a vain repetition to have given the evidence collected with regard to the provincial towns, especially as those who desire to study the condition of those towns can easily refer to the reports themselves. Not so, however, with regard to the local reports which have been subsequently issued; and which, not being readily accessible to the majority of the readers of the “Abstract,” properly find a



place in these pages. The metropolis naturally claims precedence in this matter as in others:

*State of the Metropolis.*—The condition of the more central parts of London, which constitute the city without the walls, already shown to occupy so low a place on the sanitary scale, may be judged of by the following abstract of the memorial presented to the Lord Mayor, May 25, 1847, by the inhabitants of Farringdon Without, headed by the late indefatigable advocate of sanitary measures, Dr. Lynch. This memorial stated that of all the thirty-six metropolitan districts the Ward of Farringdon Without is perhaps the worst. The houses are built back to back, and admit of no ventilation. The cesspools, which are all but open, poison the air and pollute the dwellings of the poor. In such places where there are sewers, they become the sources of disease, in consequence of the want of traps and an adequate supply of water to cleanse the outlets of filth from the houses, and to facilitate the e-scape of pestiferous gases from the decomposition of animal and vegetable matter. In Crown court, within a few yards of Fleet street, the cellars of the houses are in a most revolting condition from the overflowing of cesspools, and the accumulation of impurities of every description. In some instances, the dust contractors had not removed the offal for nine months, and they refused to perform that duty unless they received a gratuity. The poor inhabitants, sensible of the injury which such abominations inflicted, complain of the inadequate supply of water, which visits them for no more than one hour three times a week, and that their poverty prevents them from keeping vessels in which to save it. They complain, too, of the quality of the water, confined as it is in heated rooms, and absorbing animal exhalations and foul air. The drains run under a stack of houses, instead of into the main sewer: and there is at present no power to compel the landlords to open these drains direct to the sewer. The inquest of St. Sepulchre state that the courts around Smithfield and the Old Bailey are undrained, and that cowsheds, slaughter-houses, and knackers' yards are suffered to exist in the midst of a crowded population. The apprehensions to which this state of things naturally gave rise were increased by the influx of Irish paupers, and the consequent over-crowding.

If from the city of London without the walls, we pass to the richest parish in London, Marylebone, with property rated to the poor to the amount of upwards of £800,000, or an average of £37 to each house, we find a similar state of things existing.

This parish, which took so active a part in opposing Lord Morpeth's Bill, has recently appointed a sanitary committee, which has justified in every point the statements put forth in the Reports of the Health of Towns Commission, as to the disgraceful and neglected state of the metropolis generally, and of this populous parish in particular.\* The Report of the committee gives the usual history of over-crowding, deficient supplies of water, detective cleansing and sewerage, the existence of nuisances, and the unwholesome condition of the houses of the poor.

Among the nuisances particularly specified are slaughter-houses, melting-houses, crowded graveyards, pigsties and dust-heaps. In reference to the state of the dwellings of the poorer classes, the Report states that "there appears to be generally great indifference on the part of landlords of houses, to the wants or comforts of the poor, most of the premises in the occupation of the poor being badly drained and ventilated, very *dirty*, and no attention paid to cleansing or repair; in many cases, the basements are so dark as to require candles to descend to the ground-floor, there being as few windows as possible, no openings over area-doors, as such openings, even unglazed, would subject the owners of the house to the window-tax, the law, to avoid the tax, requiring that the passage should be absolutely dark. The conveniences, in many cases, only one for several houses, and where there is one to each house, it is generally much neglected.

"In many parts of the district, as may be seen by reference to the notes of the inspectors, as in Gee's court, Barratt's court, Gray's buildings, and Calmeil buildings, the privies of the houses are in a most foul and offensive state, in many cases, the tops of these places being removed, or where they remain, the seat,

\* Times Newspaper, Nov. 15, 1847.

floors and passages are covered with filth." The Report goes on to state, that the sewage "is manifestly insufficient for the wants of the locality, no fewer than 280 streets and ways in the parish being wholly without proper sewage, and a great portion of the remainder defective or incomplete." Speaking of the supply of water, the reporters state that "they have found, in most localities, the supply of water laid on in the depth of the area in front of the house, the approach to which (owing to the window-tax) is through a dark passage, while the privy is in the back-yard, as far as possible from the supply of water, with drains running through the houses, and there is no water to cleanse them." The remedies suggested by the reporters are, the removal of slaughter-houses, melting-houses, and pigsties, the compelling of the dust-contractors to perform their duty, and the active abatement of nuisances under the 9th and 10th Victoria, Chapter 96. They also urge the abolition of the window-duties, protest against the irresponsibility of the sewer-commission, and the absence of all control over the water-companies. In a word, the reporters confirm the strongest statements of the advocates of sanitary measures, and appear to be perfectly in accord as to the proper measures to be adopted, with the sole exception that "they are still firmly of opinion, that representative and freely elected bodies, properly constituted under the sanction of Acts of Parliament, and armed by the legislature with sufficient power, are capable, not only of carrying out, but of performing, in the most efficient and constitutional manner, everything possible, and which ought to be done, in the way of sanitary regulation." As no mention is made of the necessity for extra-parochial knowledge or skill, or central supervision, it is to be presumed that they still adhere to their original opposition to all government interference and control. This self-confidence is certainly not justified by the history of the past, for we learn from the *Report of the Health of London Association*, that "the vestry, under the local act, is empowered 'to nominate persons to carry out the dust, dirt, cinders or ashes.'" This power, which implies the concurrent right and duty of seeing that the contracts are faithfully performed, they have not exercised, nor can we see what guarantee the public have for its exercise in future, except it be in that government superintendence and control which they repudiate.

The parish of St. James, Westminster, as we learn from the following quotation, is not in a better condition than Marylebone:

"There are numerous narrow streets in the parish, and 28 courts and alleys, many of which are only open at one end. The greater portion of the houses in these places, are let out in rooms to the families of artisans. These lodgings are of a most indifferent description, ill-ventilated, worse drained, wanting in water and every proper convenience, and within and without reeking with foul odours. The cesspools and appendages are generally in the most confined yards, and in some of the courts, open privies, with the most unblushing publicity, show the low state of decency to which the circumstances they are placed in have reduced the inhabitants. But as if there must be, even in these wretched scenes, degrees of abomination, several of the courts have, till very recently, been used as lay-stalls for the refuse of the markets, and parts adjacent."\*

The following passage from the lecture of Lord Ebrington, embodies the results of his personal examination of the parish referred to in the preceding quotation:

"Some of these rooms were over-crowded cow-houses, where cows, diseased by the badness of the air, supply the neighbourhood with diseased milk; some close to slaughter-houses, where I saw the steam reeking up from hot carcasses; some over cesspools, cleaned out some once in five, others once in seventeen years; the walls were filthy, the smells either abominable, or exchanged for a closeness still more oppressive: the passages dark and tortuous. And yet, here were living the most respectable of the labouring classes, porters, policemen, and such like, who, though earning high wages, are pauperized by the expense of the sickness brought on them by moist dwellings, for which they pay in rent for their one miserable room, as much as Mr. Ashworth, of Egerton, a manufacturer such as this country may well be proud of, receives from his prosperous work-people for cottages which I saw, containing five, six, and seven rooms, each with every convenience."†

\* An Address to the Inhabitants of St. James, Westminster, by a Retired Churchwarden.

† A Lecture delivered at the Mechanics' Institution, Plymouth, 1845, by Lord Ebrington.

That the rural environs of London are capable of furnishing scenes of neglect and wretchedness worthy of a comparison with the metropolis itself, Mr. Lord, a medical practitioner residing at Hampstead, can testify:

"In Flask walk, one of the most public thoroughfares, abutting on the very *pavé*: is a row of houses miserably drained and ventilated. In one, on the 9th instant, a poor woman was confined, and barely escaped puerperal fever. The atmosphere, from cesspool and drain, is most loathsome. A painted chair, which has been left on the ground room, is blackened by the sulphuretted hydrogen escaping through the boards. A tame bird, which had lived a year in another house, died soon after being removed; the cat has died; seven or eight cats have died there. 'Nobody can keep their cats alive there.' The man, a shoemaker, works at his trade, and smokes tobacco to disguise the smell. The rent is 5s. per week. Here the infant was born, and if left, like two of its deceased *brothers*, the pet bird, and the doomed cats, to breathe a slow poison, will pine, suffer, and die. On my noticing the vile stench, the patient, resigned mother answered, 'It is nothing to what it is when shut up at night.'"<sup>\*</sup>

*Brentford*.—Next in order to the metropolis, will naturally rank the metropolitan county. The following passage relates to Brentford, Middlesex, and is from the pen of Mr. H. Brooke:

"Nearly opposite my house is a court, or alley, measuring eleven feet wide; it contains ten houses; each house has two rooms, both in front, eight feet square; there is no window or ventilation of any kind at the back, neither yard, court, nor garden; in each of these houses are located one or two families, numbering from five to eight persons, men, women, and children; opposite and along the whole length of the alley is a wall eight feet high, which effectually excludes the air; in the middle is a large dusthole, into which is thrown every kind of filth and refuse, and which often remains unemptied for weeks together; a dirty gutter runs the whole length, and at the bottom of it is a hole, which, if clear, communicates with the main sewer, but is frequently choked up, at which time the stagnant filth emits the most disgusting odour, particularly previous to a shower of rain, or wet weather; in the middle of the alley is an open privy, overflowing with human excrement; close by yawns an open shore or gully-hole, the receptacle of an extensive butcher's slaughter-house, into which the blood and offal of every description flow; pigsties, with hogs wallowing in dirt, fill up the sickening picture. To breathe this pestilential air, to inhale the poisonous vapours emitted from this accumulation of decomposed animal and other matters, hundreds of human beings are inextricably doomed, and that which adds greatly to their sufferings is, that they have no water to flush the court, cleanse the gutters, or wash the rooms, but what is obtained from the town pump, which is situated at some distance, and sometimes out of repair; and this state of things exists in a town running parallel with the Thames, and close to the Middlesex Waterworks, where abundance might easily be obtained, and at little cost."<sup>†</sup>

—The sanitary state of the large manufacturing and commercial cities of the north has been so minutely described in the Reports of the Health of Towns Commission, that it will not be necessary to enlarge on that subject in this place. Dr. Watson, of Liverpool, in a series of papers published in the "*Provincial Medical and Surgical Journal*," and since reprinted in a separate form,<sup>‡</sup> gives a minute account of the epidemics of 1844, from which the following passage is extracted:

"The old fever district is situated in the lowest parts of the town, not only as to topographical position, but also as to sanitary conditions. It is the worst ventilated, the streets being narrow, and the courts being frequently terminated in a *cul-de-sac*; drainage is imperfect; the houses are often crowded with so-called 'accommodations for travellers,' which signifies a low, damp cellarage, with a floor covered at night with straw, wherein are contained night 'lodgings' for multitudes of human beings, who are huddled together irrespective of the common

\* Letter to Sir Thomas Maryon Wilson, Bart., Lord of the Manor of Hampstead, &c., by Charles F. J. Lord, Member of the Royal College of Surgeons, &c.

† Sanitary Condition of Brentford, Middlesex, by H. B. Brooks, Esq. "*Health of Towns Journal*," No. 1.

‡ Some account of the Epidemic Fever which prevailed in Liverpool in the latter months of the year 1844, by Geo. Churchill Watson, M. D., Edinburgh.



moralties of life. The numbers thus slenderly 'accommodated' soon render the atmosphere of such a low-roofed den absolutely irrespirable for any one unaccustomed to breathe such pestilential air." On the other hand, the district designated as the "new fever district," seems, in parts at least, to have presented none of the characters comprised in the foregoing quotation. Speaking of Everton and Kirkdale, which are comprised in this district, Dr Watson says: "The majority of fever cases was situated on the higher part of Everton, a few under the brow of the hill and sheltered from the east. No cases occurred in courts, and in almost every instance there was the greatest cleanliness existing in the family, and nothing in the immediate neighbourhood to engender fever." There was a remarkable difference in the symptoms of the fever as it occurred in one or the other of these situations. We are told that "in the higher parts of Everton, the prevalence of thoracic symptoms was more marked than that of abdominal ones; down in the more sheltered and crowded parts of the town, the abdominal symptoms were most prominent; in other words, that whilst diarrhœa was an exception in the exposed district, it was the general rule in the less ventilated and more populous parts. The sanitary condition of the latter was found by experience to preclude depletory measures in this instance as decidedly as in the common typhoid fever, which is always more or less present in these lower regions." This statement is in accordance with the general experience of our large towns, in which fever seems to be assuming a lower and lower character as they become more and more crowded, without at the same time undergoing any improvement in their general condition in other respects.

—The following note of the Registrar of St. George, Manchester, given in the report for the quarter ending March 31, 1847, serves to show how little the state of things in our large cities has been altered since the Reports of 1844:—

"From the peculiarity of the districts, fever and other epidemics are rendered more fatal than in most others; the poor dwelling in narrow streets and damp cellars, where scarcely a breeze of fresh air visits them, and being so densely crowded, it cannot be matter of surprise that the ravages of death are so fearful. The Registrar had occasion personally to inspect some of their dwellings; one cellar consisted of two compartments, each measuring 4 yards by 4. In the first, the family of the house consisted of 7 persons; in the other, the back apartment, were no less than 20 persons, 12 adults and 7 children, and in the corner, the dead body of the child he had come to visit. In the last report he stated something of the overcrowded state of the low lodging-houses; but he had no idea of the real extent of the evil till he had witnessed it."

—The following passages from the pen of Dr. George Robinson, of Newcastle-on-Tyne, will give a very accurate idea of the structural arrangements, and sanitary condition of certain parts of that flourishing port:—

"In the Dock-house entry, in a room on the second floor, no less than six persons had recently been attacked by fever, and beneath this room is an old wooden donkey-shed, used as a receptacle for filth, from which the most offensive effluvia constantly escape. The cellars of other houses in the same court are occasionally filled with the refuse water from the adjoining gas-works, and the tenants describe the stench as most noxious. Several cases of fever were also found in the White Boar entry, which is in some parts not above four feet wide, and the floor of which is about eighteen inches above that of the lower tenements entered from it."\*

"In Dean yard, High Bridge, which is within a dozen yards of Grey street (the handsomest street in the town), and which contains a common lodging-house and several tenemented houses, a cellar under one of the latter is used as a receptacle for ashes and every description of filth; and as if this were not a sufficient source of atmospheric pollution, several pigs are kept in the same hole. It is scarcely necessary to add, that several cases of fever, one at least terminating fatally, have within the last few months occurred in this court."†

"Perhaps the most fearful illustration of the suffering and disease to which the

\* The Sanitary Condition of Newcastle-on-Tyne, by Geo. Robinson, M. D. "Health of Towns Journal," No. 1.

† Ibid.

poor are subjected from the want of proper superintendence, was furnished by Mount Pleasant, a steep bank, forming one side of a narrow, densely populated ravine near the quay; on the very summit of the hill is an open space, the sides of which are occupied by a large number of piggeries, and in close contact with these undrained filthy sties, are several tenemented houses, the lower rooms of which are considerably below the level of the accumulated refuse.

"We found that the inhabitants of these rooms (the back walls of which are rendered constantly damp and offensive by the oozing through of the foul liquid from above) had suffered severely from fever." In nine rooms visited in Craig's court, which is situated on the summit of the hill, and in immediate proximity to the piggeries, the inspectors found that in three months 50 cases of fever, and five deaths had occurred in a population of 55 inhabitants. "This abode of wretchedness and disease is in the parish of All Saints, and, it may be added, that Mr. Newton, the surgeon in charge of the poor of this district, is at the present moment (Oct. 7th) labouring under severe typhus; his assistant died last week from the same cause, and the relieving officer, whose life was at one time despaired of, is but slowly recovering from a similar attack."\*

—The sanitary condition of Sheffield has been lately explored by order of the authorities—with what result the following quotations will show:

"Another privy in Court 3, Edward street, is placed in such a situation, that it drains and evaporates into the adjoining houses, and is a source of constant disease. Fever is here very prevalent among children, three of whom have died within a very short period, and many others have been afflicted. Ten children out of a family of fourteen, have died in the house nearest to the privy, and of the four survivors, none were born during their residence here. The Asiatic cholera was also very bad in this yard, and three cases of death occurred."†

"In Charlotte square, and Forty row, the houses of which are but two stories, with two low, ill-ventilated, and, in many cases, filthy rooms, the privies, intended for the accommodation of ten families each, are placed so near the houses as to be a nuisance to all who reside in them. Several receive their drainage or evaporation, and the occupiers suffer as usual. Fever prevailed here last autumn to a considerable extent, and several deaths occurred."‡

"There is scarcely a yard of ground in this level district (Sylvester lane and Sylvester gardens) which is not covered with filthy water from the houses or privies. The very foundations of the houses are saturated with it. If there is any locality in the borough where a main sewer is absolutely required, it is here; for the utter absence of drainage, and neglect of the commonest sanitary measures, appear to have led to more epidemic disease than we have met with elsewhere. There is fever at the present time, and the inhabitants state they are never free from it. The first case of Asiatic cholera occurred here, and there is every reason to believe it to be the most unhealthy locality in the town."§

"Bright's yard, in which scarlet fever prevails, and in which six deaths have occurred in less than twelve months, contains an immense quantity of night-soil and ashes (the accumulation of two years), which prevents all access to the privies, which also, from want of being periodically emptied, empty themselves, and spread half over the yard."||

"Court 5, Pea-croft, is exceedingly close, the rooms of the houses low, dark, and ill-ventilated; a privy here, which is perfectly full, is exceedingly offensive, and the house drains are bad. Eighteen persons were all recently afflicted with fever in this yard at the same time, and on two occasions during the last 50 years, every inhabitant suffered from the same disease. One tenant has lost the whole of her children, nine in number, during her residence here. Court 2, Pea-croft, is also in a similar condition to the above, rooms in houses exceedingly low, and eight cases of fever here at present."¶

—The Registrar of the Abbey registration district, Bath, in his Report for the quarter ending Sept. 30, 1847, says:—

\* The Sanitary Condition of Newcastle-on-Tyne, by Geo. Robinson, M. D. "Health of Towns Journal," No. 1.

† A Report on the Sanitary Condition of the Borough of Sheffield, by James Heywood, Professional Chemist, and William Lee, C. E.

‡ *Ib.*

§ *Ib.*

|| *Ib.*

¶ *Ib.*

"Typhus is still prevalent, but confined to one or two districts. viz. a row of houses built back to back, the lower floors below the bottom of the adjoining canal, and the north side of Castle Foregate, which consists of many lodging-houses, situated in close passages and in small squares, having entrances under archways, and frequently having pigsties and open privies, and heaps of ashes within a few yards of the doors. The cases of typhus have, nevertheless, generally done well, only three deaths having occurred in this quarter."

—Lynn Regis, East Retford, and Canterbury furnish subjects for description in strict keeping with those just adduced.

"Within a space of 100 yards square, and constituting the following places, Chapel lane, North end, and yard, North street, Pilot street, St. Ann's street and fort. with a yard there, the disproportionate number of 57 of the whole number of 87 deaths from small-pox occur. Nine deaths out of 16 in the whole district happened from convulsions, in four of the places named, and occupying a space scarcely half the size of that referred to. So in proportion to the whole number of 187 deaths in the district, no fewer than 91 occurred in the limits alluded to from small-pox."

"New Conduit street and South Clough lane are on either side contiguous to the fleet running by Purfleet street, and here the greatest number of deaths from small-pox occurred. As with the streets, so with the yards, 19 deaths out of 51, from small-pox taking place within them."\*

"A large open common sewer existed at the end of Sutton's row, which was most offensive, and it was predicted by the medical gentlemen of the town, that should this fearful scourge (cholera), visit Retford, this ill-drained, ill ventilated, and densely populated place would prove its advent. At length the fearful reality appeared. On the 19th of July, 1832, a labourer residing in this locality was attacked, and died.

"During its five or six weeks' continuance in the town, there were 51 cases reported, of which 13 died and 38 recovered. *With one or two exceptions, the malady was altogether confined to Sutton's row.*"†

"The dwellings of the poor are generally built very close together, without either garden or yard to them; they are not provided with underground drainage, nor a proper system of ventilation, and are constantly damp, and extremely unhealthy. From three to four shillings a week is paid as rent for the cottages, and from one shilling to one shilling and sixpence for the single room.

"There are no underground dwellings in Canterbury, but the poor generally are very badly supplied with lodging. One or two examples will be sufficient to prove the truth of this assertion. In St. Gregory's square, in the parish of Northgate, there are 39 adult persons and 43 children residing in 26 rooms; it is not drained, and it has but one pump and one privy for the use of all the inhabitants. In another small space, and close to the parish church, are 17 families inhabiting 15 dwellings, in 13 small houses; these persons have no supply of water, except from a distance; they have no drainage, and but one privy, the cesspool of which has not had a covering for several years. Several parts of St. Alphage, St. Peter's, St. Mildred's, and Westgate are in the same condition."‡

—The sanitary condition of the town of Reading has been minutely examined and reported upon. The leading results will be found in a condensed form in the pages of the "Statistical Journal," § and in the speech of Mr. Samuel Warren, delivered at the Town Hall, Reading, Feb. 4, 1847. The following passage, extracted from that speech, appears to present a faithful picture of the state of things in this town:—

"In nineteen-twentieths of the whole borough there is no drainage of any description, but the sulliage of the premises is deposited in cesspools for the purpose of percolation in the surrounding soil. The town may, therefore, be viewed as a

\* An Inquiry into the Sanitary State of the Town of Lynn Regis, by George Sayle, Surgeon.

† Facts which prove the Immediate Necessity for a Measure of Sanitary Reform, by John Charles Hall, M. D.

‡ The Sanitary Condition of Canterbury, by George Rigden, Surgeon.

§ Statistics of the Sanitary Condition of the Borough of Reading, by John Billing, F. S. S., Architect. "Journal of the Statistical Society," Aug. 1847.



vast receptacle of refuse of every description. As a natural result, the earth is saturated to considerable distances; the water of the wells is frequently rendered impure; and the cesspools require to be constantly emptied. It is often found that the cesspools are under the floors of the houses, and at the time of their being emptied they become the source of universal annoyance. In those parts of the town where the land-springs abound, as in Prospect street, the cesspools require attendance more frequently. These evils are daily increasing in magnitude, as the various strata upon which the town is built become filled with impurity."

—The most recent, as well as one of the most striking, exposures hitherto made of the condition of our large towns, and of the fearful amount of disease which it entails, is given by Dr. Dehane, in the case of Wolverhampton.\* Speaking of a district occupied chiefly by a migratory population of Irish labourers, he says:—

"In this district, a few hundred yards only removed from the collegiate church, and known by the several names of the Caribee Island, Colis Croft, Castle place, and the Back lane, all in the neighbourhood of Stafford street, are huddled together many scores of miserable habitations, totally destitute of any drainage, and where the filthy surface-water is permitted to lay in pools until it becomes putrid, emitting very offensive and noxious exhalations, while the immediate neighbourhood generally presents a most disgusting accumulation of filth and rubbish, in the shape of dunghills and unemptied privies, frequently overflowing with their fetid contents. . . . The buildings are of the most squalid description, containing a population of frequently ten or twelve in a room, without either beds or even the commonest article of furniture. Here are found congregated a mass of men, women, and children, principally from the sister island, in every stage of rags and destitution. Even water, that commonest necessary of life, is wanting, there being scarcely a pump in the whole district, so that cleanliness is out of the question, were they even inclined to practise it. . . .

"The population of the district, which is of a migratory character, and fluctuating in its numbers, may be from about 1100 to 1500, and is chiefly composed of Irish labourers and their families, driven here by the late scarcity in their own country, with the view of begging or obtaining such employment as the town and neighbouring works afforded. . . .

"During the past twelve months 600 sick persons have been removed from that district to the union-house; of these, nearly the whole have been cases of fever, of which fifty have proved fatal, the remainder having been discharged more or less improved in their health; but it was speedily found that a large proportion of those who had been discharged, upon returning to their former habitations, were again seized with fever, and consequently returned to the union. In addition, seventy-eight cases of fever were attended during the last half year at the patients' dwellings in the district, and eleven of these cases proved fatal; these facts distinctly showing that the disease was fostered and kept up by the want of proper sanitary regulations in the quarter alluded to.

"The whole number of fever cases removed from the union to the town during the past year was about 1000; while from the Stafford-street district alone, as before stated, nearly 700 of these cases were received. . . .

"The total population of the town is about 40,000, that of the district in question 1400: but, owing to its migratory character, if we quadruple or quintuple its amount, which perhaps will bring the number somewhat above the reality, or if we suppose the whole population to be changed four or five times in the course of the year, we shall have an aggregate of 5600 or 7000 persons. Deducting the larger number of 7000 from 40,000, the presumed population of the town, 33,000 will remain. The total number of fever cases is, as near as possible, 1000; of these 400 have come from the other parts of the town, and about 600 from the locality in question; or, in other words, among 33 000 persons in one locality, there have been 400 cases of fever; while among 7000 persons in another locality, the floating population referred to, there have been no less than 600. The difference is enormous, and presents a striking illustration of the necessity of the rigid application of sanitary regulation to the houses and neighbourhoods inhabited by the poor.

\* Sanitary Condition of a District in Wolverhampton, by J. Dehane, M.D. "Journal of Public Health," No. 11, p. 39.

There can scarcely be any necessity to advert to the amount of suffering, and the expense incurred. In the case before us, 600 persons out of 6000 or 7000, or about a tenth, have suffered from disease, and by inability to labour, become a charge to the community."

The quotations from the more recent sanitary reports which are here brought together, reveal a condition of things in our towns of which even many medical men are unconscious; at the same time the coincidence of municipal neglect with the prevalence of disease, may furnish even to the members of the medical profession new and convincing proofs of the position put forth by the advocates of sanitary reform, that a vast amount of existing disease admits of prevention. Though fever may and does prevail occasionally in the better parts of our large towns, it is a comparatively rare visitation; but in such districts as those described in the foregoing extracts, it is not merely an occasional visitant, but takes up its abode in them, and, in common with small-pox and other eruptive diseases, with diarrhœa, dysentery, and the entire class of zymotic disorders, is always present when the weather and season are favourable. It is in such districts, too, that Asiatic cholera usually makes its first appearance. This fact is of so much importance, especially at the present time, that it deserves to be examined by itself. The recent publication of the First Report of the Metropolitan Sanitary Commission has furnished ample materials for the elucidation of the local predisposing causes of cholera, and incidentally of fever, as well as of their coincidence with each other. These will therefore be considered in a distinct section.

#### § IV.—*Sanitary Condition of Villages.*

The Report of the Health of Towns Commission, and the several works recently issued from the press, contain, as might be anticipated, little or no information on the condition of small towns and villages. Such information is obviously only to be obtained from publications of an ephemeral nature, or from reports of a strictly local character, published, for the most part, in provincial newspapers. From one or two of these, which are now before us, it may be useful to make a few extracts. For the following account of a fever which raged in Hunmanby and the neighbourhood, the profession is indebted to Dr. Laycock, the honorary secretary and active promoter of the York Health of Towns Association.\*

The Report begins by stating, that "the disease is probably the same which was so prevalent in Layerthorpe two years ago, and which was spread over almost the whole of England, infesting both towns and rural districts. It is almost, if not altogether, identical with a fever not long ago extremely prevalent in the large towns of Scotland, from whence it probably passed into England.

"It appears, from the statement of a trustworthy correspondent, that the disease first appeared at Hunmanby in August last, and prevailed more especially amongst the population resident in badly-constructed tenements, built upon soft ground badly drained, with neglected privies and drains behind. In these localities the disease was fearfully propagated, and assumed a type more intractable than in more favoured situations. There were also cases of the disease in the out farm-houses situate in airy and dry situations. From 180 to 200 persons were attacked at Hunmanby, and 20 have died out of a population of 1200.

"At Reighton, a small village three miles from Hunmanby, there have been thirty cases. Here there is a nasty marsh, with a dirty, foul pond close by, fed from some farmyards above with a quantity of offensive fluid. All the thirty cases of fever occurred in close vicinity to this pool or marsh, while the upper portion of the village has been totally exempt from the epidemic. It has also prevailed in other villages, namely, North Burton, Muston, and Flixton."

Dr. Laycock, in a letter addressed to the gentleman from whom the foregoing information was obtained, proceeds to make the following observations:

"It is a remarkable circumstance that so many of our pleasant English villages suffer so severely from typhus fever; we are, I believe, far more exempt from this sad affliction in York than the rural population around us, and the fact has been quoted as showing that pure air and good ventilation do not influence the progress

\* Published in the *Yorkshireman*, Feb. 6, 1847.

of epidemics. Yet repeated and careful inquiries, as well by others as on my own part, have most clearly shown that the propagation of these infectious fevers is very much facilitated, and their fatality very much increased, by those sources of miasma which you pointed out. There can, I think, be no doubt whatever, in the minds of those who have carefully investigated the matter, as to the truth of this principle. Your observations as to the locality of Hunmanby, in which the fever assumed a more intractable form, and of Reighton, in which it prevailed more especially, are quite confirmatory of this point. They are also confirmatory of the idea which is gradually being adopted, namely, that it is a mere assumption, and altogether contrary to the fact, to say that the rural labouring population have pure air and good ventilation in their houses. On the contrary, it is now believed that thousands of our village population are in as bad a condition in these respects as the working classes of large towns. Even farmhouses are not exempt from these evils. . . . I believe that few farmers are aware that the plan adopted by many, of leaving their straw (mixed with the dung of their cattle) to rot and become manure in a yard situate close to their premises, is the surest method they could devise of predisposing themselves and their servants to suffer severely from such an epidemic as the one in question. Where you have a quantity of straw rotting you must necessarily have an evolution of noxious gas. Flax lying upon flax-grounds in open, dry, and sandy situations, has been known to cause fever. Now in a farmyard where straw and dung are decaying together, you have an ample source of miasm, even if situate in a high and dry situation; and if the drainage from such yards is allowed to run along in an open channel, or into open ditches near to dwellings, you have the sources of miasm still more widely extended."

The reply to this communication confirmed the fact, that it is too general for the farmhouse to be close by the yard where there is a large dungheap, and too often there is a pool or deposit near the back door, which is not only a receptacle for what drains from the dungheap, but receives also the washings of meat and vegetables from the back kitchen.

It appears, also, that some of the labourers' cottages in some villages are sadly deficient in all that contributes to health and comfort. At Reighton this is particularly the case, no trouble being taken to repair the cottages. The erection of dwellings for the rural labourers has fallen into the hands of the small proprietor, who builds with the sole intention of realizing a profit from the investment of his capital, regardless of the health and comfort of the inmates.

A similar condition of the rural villages in Somersetshire, and with a similar prevalence of fever, has been set forth in a series of letters published in the "Bridgewater Times" during the month of January of the present year. The communications are of too controversial a character to admit of quotation, but they reveal a very disgraceful state of things, and one demanding government interference and surveillance to the full as urgently as the state of our large towns. To the neglected state of our villages, and especially to the overcrowding of sleeping-rooms, Mr. Toynbee bears witness in a recent publication;\* and Mr. Chadwick, early in the present year, traced this great evil, with his usual ability, to the operation of the present unwise law of parochial settlement, which offers irresistible inducements to the destruction of existing cottages, raises up serious obstacles in the way of the building of new ones, and leaves the agricultural labourer no option but the unhealthy suburbs of large towns, oftentimes several miles distant from his place of work. The effect of such a state of things upon the sanitary condition of the labourers in the rural districts is most disastrous. A few extracts from Mr. Chadwick's able address to the members of the Farmers' Club on this vital question will repay perusal, and may serve to draw the attention of the country practitioner to a very fruitful source of disease.

"The lower districts of Reading were severely visited with fever during the last year, which called attention to the sanitary condition of the labouring population. I was requested to visit it. Whilst making inquiries upon the subject, I learned that some of the worse-conditioned places were occupied by agricultural

\* Journal of Public Health, No. ii, p. 47.



labourers. Many of them, it appeared, walked four, six, seven, and even eight miles, in wet and snow, to and from their places of work, after twelve hours' work on the farm. Why, however, were agricultural labourers in these fever-nests of a town? I was informed, in answer, that they were driven in there by the pulling down of cottages, to avoid parochial settlements and contributions to their maintenance in the event of destitution. Amongst a group, taken as an example there, in a wretched place, consisting of three rooms ten feet long, lived Stephen Turner, a wife, and three children. He walked to and from his place of work, about seven miles daily, expending two hours and a half in walking before he got to his productive work on the farm. His wages are 10s. a week, out of which he pays two for his wretched tenement. If he were resident on the farm, the two hours and a half of daily labour expended in walking might be expended in productive work; his labour would be worth, according to his own account, and I believe to a farmer's acknowledgment, 2s. 6d. per week more. For a rent of £5 5s., such as he now pays, he would be entitled to a good cottage with a garden, and his wife and children being near would be available for the farm labour. Why then should there be this displacement, so injurious to the labourer, and, as it will appear, unprofitable to the farmer? The answer was, it is brought about by the law of parochial settlement."

The following is a striking example of the pauperizing effect of a law professionally enacted for the relief of pauperism.

"A man belonging to Maple-Durham lived in Reading, walked about four miles per day to his work, the same back, frequently getting wet, took fever, continued ill some time, assisted by the Reading union in his illness; recovered, and could have returned to his former employment of 10s. per week, but found he was incapable of walking the distance; the consequence was, he took work that only enabled him to earn 5s. per week; he is now again unable to work."

The extent of this great evil in a single neighbourhood may be judged of from the statement of Mr. Chadwick, that "so far as he could learn, there are between one and two hundred agricultural labourers living in the borough of Reading, and the numbers are increasing."

The following quotation will serve to show, that the vicious operation of this unhappy law is not confined to one part of the country, and will also prove that medical men are not ignorant of the real state of the case, or indifferent to it.

"Bedford has been severely visited by fever; and it appears, upon inquiry, that agricultural labourers, of whom there are between one and two hundred, are there driven by the operation of the law of parochial settlement to reside in some of the over-crowded ill-conditioned districts. These too have to walk to and from their work four, six, and eight miles daily. Mr. Wing, the clerk of the Bedford union, has transmitted to me the following description, by one of the medical officers, of the effects upon the labourers within his observation: 'To persons of sedentary habits,' he says, 'a walk to and from their places of work would be conducive to health. Not so with the agriculturist, who is laboriously occupied from an early hour in the morning till night; and if he is compelled to sally forth (with his bundle of cold provisions for the day) an hour or an hour and a half earlier, and to walk four or five miles, at all seasons of the year, and in all weather, in order to be in the field or the barn at the same time with his fellow-labourers on the spot, his sleep is prejudicially curtailed, and he is, in the long run, predisposed to the inroads of disease. I have repeatedly observed the ill effects of this daily extra exertion and curtailment of rest, and have often, in cases of convalescence under these circumstances, found it necessary to advise men not to resume their work so soon, by two or three weeks, as they otherwise would have done. One case to the point particularly recurs to my mind of a man who lived at a distance of three miles from his work, and had recovered from fever: two other members of his family were also labouring under the disease, and he was anxious to return to his work in order the better to provide for their wants. He procured my reluctant consent. Within a fortnight he was seized with a relapse of the disease, through which he struggled difficultly with his life; and I have no doubt that the early and late walks in the winter season, with deficient rest, mainly contributed to produce the second attack, to say nothing of their probable predisposing influence in reference to the first. A man having to walk three miles to

his place of labour, and three miles back daily, is equivalent to two hours' extra work. Thus, he must rise one hour earlier in the morning, and be kept from home one hour later in the evening, than if resident in the place where his work is situated; he has also to endure greater fatigue, and of course greater wear and tear of his system." John Freeman states that in hay time he has been obliged to leave home at two o'clock in the morning, and has not returned till ten o'clock in the evening; and that when he has reached his place of work in the morning he has felt as much fatigued as he ought to have done in the evening. Amongst other injuries which this separation from the place of work entails is, diminution of income from non-employment of children. A man living in the place where he works can generally procure employment for boys twelve years old: this he cannot do where non-resident, as boys of that age would not be able to go backwards and forwards and work all the day. Besides these losses he incurs extra expense. A man and family cannot live in Bedford under £5 for rent and taxes of house, whereas at ———, the rent of a house, with a large garden attached, would not exceed 25s. He is thus obliged to fare harder with respect to food and clothing than if living in his village. He is moreover subjected to loss of comfort. He is separated from his wife and children, excepting in the night, and of course is prevented from taking his meals with them, and thus he loses the comforts to be derived from association with his family. This system destroys all sympathy between the employer and the employed, and all identity of interests."

Mr. Chadwick proceeds to show, that this cruel law is in active operation in Lincolnshire, Hampshire, Wilts, Dorsetshire, and Warwickshire; in fact, human nature must be very different from what all experience proves it to be, if there is any county or district free from its degrading, demoralizing, and pauperizing effects.

One more quotation illustrative of this system of overwork is all that our space will allow us to transcribe.

"Near Gainsborough, Lincoln, and Louth, the labourers walk even longer distances than near Reading. I am informed of instances where they walk as far as six miles, that is twelve miles daily, or seventy-two miles weekly, to and from their places of work. Let us consider the bare economy, the mere waste of labour, and what a state of agricultural management is indicated by the fact that such a waste can have taken place. Fifteen miles a day is the regular march of infantry soldiers, with two rest days—one on Monday and one on Thursday; twenty-four miles is a forced march. The man who expends eight miles per diem, or forty-eight miles per week, expends to the value of at least two days' hard labour per week, or 100 in the year uselessly that might be expended usefully and remuneratively in production. How different is it in manufactories, and in some of the mines, or at least in the best managed and most successful of them. In some mines as much as two and three thousand pounds is paid for new machinery to benefit the labourers, and save them the labour of ascending and descending by ladders. In many manufactories they have hoists to raise them and their loads from lower to upper rooms, to save them the labour of toiling up stairs, to economize their strength for piece-work to mutual advantage. The Rev. Frederick Peel, of Gainsborough, informs me—"I have farms under my knowledge where the labourers going to and fro do not walk less than 400 miles a week."

The whole subject of the physical and moral effects of the law of parochial settlement, has been most ably and happily illustrated by Mr. Chadwick. Much of it belongs with propriety to the science of hygiene, and as such is here introduced.

#### § V.—Sanitary Legislation.

The last session of Parliament has placed upon the statute book one or two useful acts.

*The Towns' Improvement Clauses Act.\**—This is one of a series of consolidation

\* An Act for consolidating in one Act certain provisions usually contained in Acts for paving, draining, cleansing, lighting, and improving towns. (Anno 10 and 11 Vict., cap. xxiv, June 21, 1847.)

acts passed in the last session of parliament, with a view of insuring greater uniformity in local legislation, and in order to avoid the incessant and costly repetitions of local acts. The act embraces the important subjects of paving, draining, cleansing, lighting, watching, and improving towns and populous districts. The commissioners constituted under the act are authorized to appoint the following local officers: a surveyor, an inspector of nuisances, and an officer of health; the first and last named officers to be subject to the approval of the government inspector, when such shall be appointed, or of one of her Majesty's principal secretaries of state. The duties to be performed by the officers of health are laid down in the 12th clause, which runs as follows: "The commissioners may, if they think fit appoint, subject to the prescribed approval, or where no approval is prescribed, subject to the approval of one of her Majesty's principal secretaries of state, a person of competent skill and experience, who shall be styled 'the Officer of Health,' whose duty it shall be to ascertain the existence of diseases within the limits of the special act, especially epidemics and contagious diseases, and to point out any nuisances or other local causes likely to cause and continue such diseases, or otherwise injure the health of the inhabitants, and to point out the best means for checking or preventing the spread of such diseases within the limits aforesaid, and also the best means for the ventilation of churches, chapels, schools, registered lodging-houses, and other public buildings within the limits aforesaid, and from time to time, as shall be required by the commissioners, to report to them upon the matters aforesaid, and to perform any other duties of a like nature which may be required of him; and the commissioners, with the same approval, which is necessary for the appointment of the officer of health, shall fix the salary to be paid to such officer, and shall pay such salary out of the rates to be levied under this or the special act. And the commissioners with the like approval may discontinue such officer, or remove any such officer of health." The act further requires the commissioners to make a map of the district within the limits of the special act, or to obtain such maps from the ordinance surveys. The map to be marked with level lines, and corresponding bench marks to be set up at convenient spots. The commissioners are also to prepare plans of alterations of works, such plans to be deposited in the office of the commissioners. The act further vests all sewers and other works in the commissioners, gives power to purchase private sewers, and to build new sewers where none exist, "and they may also cause such sewers to communicate with and empty themselves into the sea or any public river or watercourse, or they may cause the refuse from such sewers to be conveyed by a proper channel to the most convenient site for its collection and sale for agricultural or other purposes, as may be deemed most expedient, but so that the same shall in no case become a public nuisance;" and with respect to the drainage of houses it is enacted that "if any house or building within the limits of the special act be at any time not drained by a sufficient drain or pipe communicating with some sewer, or with the sea or some public river, to the satisfaction of the commissioners, and if there shall be a public sewer within *one hundred feet* of any part of such house or building, the commissioners shall construct or lay from such house or building a covered drain or pipe, of such materials, of such size, at such level, and with such fall as they think necessary for the drainage of such house or building, its areas, water closets, privies, and offices; provided that the cost of executing such work shall not, without the written consent of the owner, exceed one year's rack rent of such house or building; and the expenses incurred by the commissioners in respect thereof, if not forthwith paid by the owner or occupier, shall be defrayed by the drainage rates hereinafter mentioned." It also enacts that no house shall in future be built without drains, and that when houses are rebuilt it shall be at such a level as to admit of the perfect drainage of the basement. The commissioners may also require the owners of houses to provide privies and ash pits, and where a sufficient supply of water is laid on, water-closets. The drains, privies, and cesspools to be kept in good order by owners, to be subject to inspection, and drains not to be altered under penalty.

With regard to new streets it is enacted that "Every person who intends to make or lay out any new street shall give notice thereof to the commissioners, in order that the level of such street may be fixed by the commissioners," and that persons laying out streets with notice shall be liable to the expenses of subsequent



alterations of levels. The act further regulates the width of new streets, and prescribes as the minimum 30 feet for a carriage road, and for other streets 20 feet. With respect to improving the line of streets it is enacted that houses may be set forward, that the commissioners may purchase houses or ground for effecting additional improvements; that houses projecting beyond the line of street, when taken down, are to be set back; and that future projections of houses, &c., are to be removed on notice. Ruinous or dangerous buildings to be taken down or secured. The expense to be levied by distress on the owner, and if the owner cannot be found, the commissioners may take the house or ground.

With respect to cleaning the streets, it is enacted that the commissioners shall cause streets to be cleansed, and dust and ashes to be removed from the houses. Occupiers to cause the footways to be swept, under penalty; commissioners may compound for sweeping footways; they are also to appoint scavengers for sweeping, cleansing, and watering the streets, &c.

With respect to the prevention of nuisances, the act contains several excellent provisions. It imposes penalties for neglecting to remove waste or stagnant water in cellars or other places within houses after receiving notice from the commissioners to remove the same, and for allowing the contents of any privy or cesspool to overflow to the annoyance of the occupiers of any adjoining property. The commissioners may also drain and cleanse out any stagnant pools, ditches, or ponds of water, and abate any such nuisance, the expenses to be paid by the person committing such offence. It also contains regulations to prevent the accumulation of dung, and, on certificate of the officer of health, authorizes filth to be removed and houses to be whitewashed and purified.

With respect to burying the dead, it enacts that no interment in any grave shall be made without leaving two feet six inches clear of soil above the coffin. Justices may order nuisances to be abated under penalty of 5*l*.

The important subject of ventilation is not overlooked; for it is enacted that places for public meetings are to be constructed with the approbation of the surveyor; that houses are not to be built in close courts, that cellars in courts are not to be occupied as dwellings; that cellars, though not situated in courts, are not to be let for dwellings unless 7 feet in height from the floor to the ceiling, one third of the height being above the level of the street. The commissioners are to keep a register of lodging-house keepers, and to make rules for promoting cleanliness and ventilation, to be enforced by penalties. The commissioners are also empowered to make arrangements for lighting streets. The water supply is also placed under their control; they may construct public cisterns and pumps for supplying water to baths and wash-houses; they are to cause fire-plugs to be provided and maintained; they may also contract for a supply of water. New works are not to be constructed without the approval of the Commissioners of her Majesty's Woods and Forests, or such other superior authority as may hereafter be established. The act further authorizes the commissioners to license and inspect slaughter-houses, requires that existing slaughter-houses shall be duly registered, forbids the erecting of new ones without a license, and empowers the commissioners to make by-laws for their regulation. Places for public recreation, for bathing, and drying grounds, and baths and wash-houses may be provided. There are some excellent provisions in the act relating to the mode of levying rates, of which the most important is that which spreads the repayment of money raised upon mortgage over 30 years. The rates to be paid by the occupier, except in certain specified cases. There are many minor provisions of the act which it is not necessary to give in detail. On the whole it seems well calculated to answer the purposes which it has in view, to furnish model clauses for future local acts, should such unfortunately be required. It is, however, to be hoped that its principal provisions, embodied in the act promised after the recess, may become the law of the land, and lead to those reforms in all our towns which are so urgently required.

*Act for the Removal of Nuisances and the Prevention of Contagious and Epidemic Diseases.\**—This temporary act, which expires at the end of the present session

\* An Act for the more speedy removal of certain nuisances, and to enable the Privy Council to make regulations for the prevention of contagious and epidemic diseases until

of parliament, is a good example of well-intentioned but comparatively inefficient legislation. It has led to the suppression of some nuisances, but has amply demonstrated the necessity for a more comprehensive and stringent sanitary measure. It provides "that it shall be *lawful* for any town council or other like body having jurisdiction within any corporate town, borough, city, or place, or any trustees, or commissioners, or other like officers acting under the provisions of any act of parliament for the drainage, paving, or cleansing, or managing or directing the police, in any town, borough, city, or place, or for any of the above purposes, or for commissioners acting under the provisions of an act passed in the ninth year of the reign of his Majesty King George the Fourth, intituled an act to make provision for lighting, cleansing, and watching cities, towns corporate, and market towns in Ireland, in certain cases, or in case there shall be no such town council or other like body, or no such trustees or commissioners having jurisdiction or acting as aforesaid, in any town, borough, city, or place, then it shall be *lawful* for the guardians of the poor, upon receiving a certificate in writing, signed by two duly qualified medical practitioners, of the filthy and unwholesome condition of any dwelling-house or other building, or of the accumulation of any offensive or noxious matter, refuse, dung, or offal, or of the existence of any foul or offensive drain, privy, or cesspool, to lay a complaint before any two justices of the peace, and such justices, upon the production of such certificate as aforesaid, shall forthwith summon the owner or occupier of the premises described in such certificate, to appear before them or some other justices to answer the matters of complaint alleged in such certificate, and if such owner or occupier shall not appear at the time and place named in such summons, or having appeared, shall not show sufficient cause to the contrary, or if there is no owner or occupier, or if it appears that no owner or occupier can be found, and upon proof that a copy of the said summons was left on the premises in the summons mentioned, then in either of the cases aforesaid such justices upon proof to their satisfaction of the existence of the nuisance in the said certificate described, shall forthwith make an order in writing under their hands and seals for the cleansing, whitewashing, or purifying of any such dwelling-house or other building, or for the removal or abatement of the nuisance in the said certificate described, within the period and in the manner in the said order to be prescribed (such period not being more than two clear days, of which *Sunday* shall not be one, after notice of the making of the said order has been given in pursuance of the provisions of this act). and such order, or a true copy of the same, shall be forthwith served upon the owner or occupier respectively of the premises or place mentioned in such order, or if there be no such owner or occupier, or if such owner or occupier cannot be sued, then such order, or a true copy thereof, shall be forthwith affixed upon some part of such premises or place as aforesaid; and if the dwelling-house or other building in the said order mentioned shall not be cleansed, whitewashed, or purified, or if the nuisance in the said order described shall not be removed or abated within the period and in the manner in the said order mentioned, it shall be lawful for the persons who made the complaint, and who shall be authorized by the said justices so to do, by themselves, their servants, and others, to enter any dwelling-house or other building or place in the said order mentioned, to cleanse, whitewash, or purify such dwelling-house or other building, or to remove or abate the nuisance in the said order described." The act further imposes a fine not exceeding 10*l.* or less than 2*l.* on any party wilfully obstructing the parties empowered to remove nuisances, provides for the recovery of the expenses incurred from the owner or occupier of the premises, adapts itself to the different circumstances of Scotland, gives powers to the Privy Council in England and Scotland, and the Lord Lieutenant and Privy Council in Ireland to issue orders at any time to prevent the spreading of contagious or epidemic diseases, and excepts from the operation of the act those places in which a medical officer of health and an inspector of nuisances has been or may hereafter be appointed under any local act passed in the current session of parliament.

One defect of the act is indicated by the word *LAWFUL*. The act is *permissive*,

the thirty-first day of August one thousand eight hundred and forty-seven, and to the end of the then next session of parliament. (August 28, 1846.)

not compulsory; that is to say, it is permissive as far as the authorities are concerned, and only compulsory on the owner or occupier of the dwelling or nuisance. As a matter of course, the act provides no payment for the medical man. His duties, as usual, are to be gratuitous. It appears that the act has been inoperative in one town (Tynemouth) because there is only *one* magistrate resident in the borough, whereas the act requires *two*; and because the commissioners under the North Shields Improvement Act are too large a body, and hold their meetings at periods too remote; in another town (Bath) because having the apparent advantage of more than one of the authorities specified in the act, the said authorities cannot agree as to which should undertake the prescribed duties. The act has not been altogether inoperative; but its chief value consists in the demonstrative proof which it affords of the inadequacy of *permissive acts of parliament*, the indifference of local authorities, and the imperative necessity of one comprehensive, practical, stringent sanitary act.\*

*Amended Passengers Act.*†—This act extends the operation of the passengers act (5 and 6 Vict. c. 107) to *every* ship carrying *any* passenger, instead of limiting it to vessels carrying more than thirty passengers, but with certain provisos, for which the reader is referred to the amended act itself. The clauses which especially refer to the preservation of health are the second, third, fifth, and ninth. The second clause empowers the "emigration officers" to substitute other articles of diet for those named in the first act; the third clause provides that all articles of food required by the act shall be furnished at the expense of the owners or charterers, and shall be of good quality; the ninth clause relates to the replenishing of provisions by ships putting into any ports of the United Kingdom: and the fifth clause lays down regulations for ensuring proper light and ventilation. As this clause is important, it is here given *in extenso*: "And be it enacted, that for the purpose of ensuring a proper supply of light and air in every ship carrying on any such voyage as in the said recited act mentioned, a greater number of passengers than in the proportion of one passenger to every twenty-five tons of the registered tonnage of such ship, the passengers shall, at all times during the voyage (weather permitting) have free access to and from the between decks by each hatchway situate over the space appropriated to the use of such passengers; provided always that if the main hatchway be not one of the hatchways appropriated to the use of the passengers, or if the natural supply of light and air through the same be in any manner unduly impeded, it shall be lawful for the emigration officer at the port of clearance, or his assistant, or where there is no such officer, or in his absence, to the chief officer of customs at the port from which a clearance shall be demanded, to direct such other provision to be made for affording light and air to the between decks, as the circumstances of the case may, in the judgment of such officer appear to require, which directions shall be duly carried out

\* The form of medical certificate may be useful during the short time the Act has still to run.

To the Town Council, &c., or to the Guardians of the Poor of the Union or Parish (as the case may be).

We, the undersigned, A B and C D, two duly qualified medical practitioners, residing at (insert name of the parish), having viewed the dwelling-houses occupied by one X Y, (or a certain piece of land near the King's Head public house, or certain premises occupied by one Y Z, as the case may be, describing the premises,) situate in street, in the parish of in the county of , do hereby certify, that the said dwelling-house is in a filthy or unwholesome state [or that there is an accumulation of offensive or noxious matter, refuse, dung, and offal on the said piece of land; or that there is a foul and offensive drain, privy, or cesspool, on the said premises occupied by Y Z, situate, &c., as the case may be,] and that the same is likely to be prejudicial to the health of the occupiers, or of the persons whose habitations are in the neighbourhood of the above-mentioned premises. Witness our hands this day of one thousand eight hundred and

Signed A B.

C D.

Members of the Royal College of Surgeons.  
(as the case may be.)

† An Act to amend the Passengers Act, and to make further provision for the carriage of passengers by sea. (22d July, 1847.) Anno 10 and 11 Vic.



to his satisfaction: and in case of any default herein the master of the said ship shall be liable to the payment of a penalty not exceeding fifty pounds sterling."

During the past session, also, some amendments have been made in the Baths and Wash-houses Act. which, however, are not of a nature to require a detailed notice in this place. On the whole, the legislature has evinced a growing appreciation of the importance of sanitary measures, and the value of health and life; and it is to be hoped that it will not allow another session of parliament to pass without enacting a large and comprehensive practical measure, (not *permissive*, but *compulsory*,) applicable to all towns and populous places, and even to rural villages, in the carrying out of which the medical man shall be called upon to take an active part, and for which he shall receive due and fair remuneration.

In the meantime, a very important step has been recently taken in London where the six sewer commissions have been superseded, and a single commission, comprising twenty-three names, most of which have long been associated with the subject of sanitary reform and improvement, has been substituted for them. This act is the first-fruit of the Metropolitan Sanitary Commission, and is in accordance with the suggestions of their first report recently published.

#### § VI.—*The Cholera.*

The anticipated approach of this fatal pestilence has, as might be expected, attracted the attention of the press and of the medical profession, and has induced the recently-appointed Metropolitan Sanitary Commission to review the history of its first attack in 1831-2, to reconsider the measures at that time adopted to prevent its approach, and check its progress, to examine the predisposing causes which determined the places and class of persons attacked, and to point out the course to be adopted, with a view, not to prevent its appearance among us, (for that would appear to be a hopeless undertaking,) but should it arrive in England, to disarm it, as far as may be, of its terrors. An abstract of the important evidence collected by the commission, preceded by a brief reminder of the particulars of its first visit, and a short summary of its continental progress, up to the end of November of this year, cannot but prove acceptable to the reader.\*

The cholera appears to have been unknown in Europe prior to the year 1831. It broke out near Calcutta, in the year 1817, when it not only committed fearful ravages in India, but carried off 400,000 persons in Java and Malacca. In the succeeding year, China, the Birman Empire, the Malaccas and the Mauritius suffered severely, and assuming a more northern course, it passed through Persia and Arabia in 1821; appearing, in 1823, at the foot of the Caucasus, and the margin of the Caspian Sea; 1826 witnessed its advent in Siberia, whence it advanced with hasty strides into the interior of Russia. Africa was invaded in the next year, and the disease also was raging at the same time in Egypt. Poland, Galicia, Austria, Bohemia and Hungary suffered in their turn; it reached Prussia in 1831; thence it rapidly traversed the sea to England, passed over to France, and was next seen in the New World. It also passed from Asia Minor to the south of Europe. The number of cases in England and Wales, during the years 1831-2, including London, amounted to 61,051, and of these 40,473 recovered, and 20,578 died; 33 per cent., therefore, or about 1 case in 3, proved fatal. In the metropolis there were 11,020 cases, of which 5745 recovered, and no less than 5275 deaths, being little short of 50 per cent.

The present epidemic, after raging with great violence for two years in Persia, where it was propagated in a direction from S. E. to N. W., towards the end of the summer of 1846 broke out at Tauris and Teheran, and during the autumn advanced within a short distance of the Russian frontiers. On the 16th of November, 1846, cases occurred at the village of Saliary, and also in the same month at Leukoran, and it is worthy of remark, that these were the places first attacked in 1830. The disease also appeared at Bakrou; and advanced in December to Schémakha, Derbent, and in the month of February, 1847, to the town of Kouba. Its appear-

\* For more full particulars in reference to the epidemic of 1831-2, and the course of the present epidemic, the reader is referred to a paper by Dr. J. C. Hall, in the Journal of Public Health, No. ii. p. 32, to which we are chiefly indebted for this abstract.

ance at Saliy and in the district of Talysch was marked with great malignity. Selecting for its victims those who had but recently recovered from the fever of the country, the cholera almost invariably carried off every patient; nearly 9-10ths dying. After a few weeks, the cases were less violent, and the number of deaths, as compared with that of the patients, was in the ratio of four to five. In the other localities of the Trans-Caucasian provinces, the attacks became less violent, and, without the towns, the disease no longer presented a malignant type. Towards the end of February, all traces of the disease were lost, and hopes began to be entertained that the country was once more free. In the following month, however, it broke out with increased violence, and in April, it began to spread with fearful rapidity, traversing simultaneously three districts, passing to the north, along the shores of the Caspian Sea; to the north-west, in the direction of the mountains; and on the west, towards Tiflis, which it reached on the 17th of May. It appeared on the other side of the Caucasus, on the 24th of May, at Kizliar, whence, re-ascending the Terek, it penetrated to Mozdok; afterwards, at the end of June, to Piatigorsk and to Georgierk, and entered Stavropol in the first week of July.

From the 16th of October, 1846, to the 14th of June, 1847, the Caucasus and Trans-Caucasian provinces reckoned no less than 17,055 cases of cholera, of which 6318 died.

During the first week of July, the cholera made its appearance also in the government of Astrakan. The first patients were attacked on the 3d, in the quarantine of Astrakan, situate about 100 wersts to the south of the city, on an island named Birtchiakossa; on the 4th, cases occurred in the military district, and on the next day, in the third quarter of the city, a Tartar was attacked, and died on the 6th in the hospital. The malady now sensibly spread into the city. Its progress was at first slow, and some difference of opinion seems to have existed as to the true nature of the disease; the majority of the physicians looking upon it as a severe form of the sporadic cholera that annually prevails during the summer months. The number of cases reported from the 4th to the 13th, was 23, and of these no less than 19 died. The majority of those attacked belonged to the lower orders, and it made no distinction of age or sex; the males attacked, however, exceeded the females in the proportion of 5 to 1; adults were more frequently affected than children, and in general, the Mahometans suffered much less than the Russians, the former being much more cleanly in their habits, and very sober and careful in their diet.

It appears that in Astrakan the disease was at first most violent, death frequently ending the sufferings of the victim in a very few hours; in many cases, so rapid was the complaint, that no time for medical assistance was afforded; the powers of life sinking from the first. During the first three days (from the 13th to the 16th or 17th of July) more than one-half died; after this, the disease gradually assumed a more favourable aspect, and the recoveries were more numerous. On the 19th of July, the number of deaths was 137, which, gradually declining, were reduced on the 2d of August to 14.

From an official return of the number of deaths from cholera in Astrakan, from the 4th of July to the 2d of August, it appears that out of a total of 2071 cases, 1223 died, and 848 recovered. Towards the end of October, the cholera reached Moscow, in which city, according to official accounts from St. Petersburg, out of the first 140 cases, 40 had proved fatal; and between Oct. 25th and Nov. 1st, 641 persons had been attacked, of whom 233 had died, being a mortality of little more than one-third. The grand total up to Nov. 1st, was 1197 attacks, and 402 deaths. According to the latest accounts, which, however, may require confirmation, cases had occurred in Vienna and Hamburg, and at Malta.

The Metropolitan Sanitary Commission have very properly made the Asiatic cholera their first subject of inquiry.\* To this course they were impelled by a consideration of its high mortality when it made its attack in 1831-2, by its ascertained connection with the defective structural arrangements involved in their investigations, by the probability of its again visiting these islands, and by inform-

\* First Report of the Commissioners appointed to inquire whether any and what special means may be requisite for the improvement of the health of the metropolis.

ation received from Sir William Pym, who, at an early stage of their proceedings, attended from the Council Office, and informed them of the advices which had been received from the English Consuls, of the steady progress of this pestilence, precisely upon its former track in 1832.

They immediately called before them medical witnesses who had been in practice in the metropolis when the disease prevailed there, and who were most extensively engaged in attending on the sick, with the view of obtaining information as to the past and present sanitary condition of the people, of the localities in which they reside, of their dwellings, and of other circumstances which appeared to favour the spread of the disease; also as to the effects of the measures both of prevention and alleviation which were then adopted, and the modifications suggested by the experience then obtained.

Concurrently with these inquiries the Commission endeavoured to ascertain the state of information and the practical skill and competence, as exemplified in their works, of the authorities charged with the direction of what all previous inquirers had agreed in representing as the chief means of prevention; namely, the works of draining and cleansing. With this view they examined the chief paid officers of all the Commissions of Sewers, with the exception of that for the city of London.

The first inquiry into which the Commissioners enter has reference to the measures which had been adopted to prevent the introduction and extension of that disease in 1831.

The first act of the government was to appoint, by order of the Privy Council, a Central Board of Health in London; and to issue an order in Council, dated the 20th day of October, 1831, in which they proclaimed the presumed efficacy of the measures of extreme precaution adopted for preventing the introduction of the cholera morbus by a rigorous quarantine, but evincing a well-grounded misgiving as to their ultimate success. This document then went on to speak of strict regulations for ensuring non-intercourse of infected with healthy districts, hinting at the possible necessity of military and police *cordons sanitaires*, to order the setting apart of one or more houses in each town or its neighbourhood, as places to which every case of the disease, as soon as detected, might with consent of friends, be removed; and in a word, adopting most of the precautions so rigidly enforced during the prevalence of the plague.

In the meantime the removal of filth of every description, extreme cleanliness and free ventilation, burning of decayed articles, such as rags, cordage, papers, old clothes and hangings; and the purification of clothes and furniture by copious effusions of water, and boiling in a strong ley, were enjoined.

The Central Board of Health, however, had been in existence less than one month when, in consequence of information transmitted to them relative to the progress of the cholera in various parts of Europe, but more especially guided by the conclusions to which Drs. Russell and Barry had arrived, after a five months' careful and laborious observation of the character of the disease in those parts of Russia which they visited, issued a circular, dated Nov. 14, 1831, in which they strongly deprecate all measures of coercion for the purpose of ensuring non-intercourse, adding, "that, under proper observations of cleanliness and ventilation, this disease seldom spreads in families, and rarely passes to those about the sick, unless they happen to be particularly predisposed." so that it will not be necessary, "where there is space, and where due attention is paid to cleanliness and purity of air," "to separate members of families actually affected by the disease, nor to insulate individual houses, unless in cases of crowded, filthy, badly-ventilated habitations, and other contingencies which involve the health and safety of all."

The circular then went on to prescribe the formation of District Boards of Health, each to consist, if possible, of a resident clergyman, and a number of substantial householders, and of one medical man at least. These Boards to be charged with the following duties in their respective districts, viz.:

"1st. To appoint inspectors. Each inspector to visit daily, and to inquire carefully after the health, means of subsistence, cleanliness, and comforts of the inmates of, say 100 houses (more or less), according to local circumstances. 2d. To receive and examine the reports of these inspectors, which should be made up to a given hour on each day. 3d. To endeavour to remedy, by every means which individual and public charitable exertion can supply, such deficiency as may be



found to exist in their respective districts, in the following primary elements of public health, viz. the food of the poor, clothing, bedding, ventilation, space, cleanliness, outlets for domestic filth, habits of temperance, prevention of panic. 4th. To report to their principal Boards respectively on the above heads, as well as on the actual state of health in their districts."

The Board further recommended that when a family was reported to be in an unhealthy state, and the disease was confirmed to be cholera by a medical member of the District Board, that the head of such family, if unable to afford proper accommodation at home, should be advised to send the sick person forthwith to the temporary hospital, and that the other members of the family should be supplied with such additional means and comforts as their state might require, to enable them to resist the influence of the infected atmosphere in which they lived.

In a circular issued on the 13th December, 1831, it was further recommended that a number of steady men should be appointed to lime-wash and purify such apartments as might be pointed out by the inspectors of the local Board.

Minute directions were added as to diet, clothing, and the general regimen to be adopted, with the view of obtaining and preserving a sound state of health.

Such were the measures at first proposed to protect the country against the introduction and spread of Asiatic cholera. The notorious failure of quarantine regulations, and the advent and fatal career of the cholera, in spite of all the precautions adopted in 1831, by the Central Board of Health, have induced the Metropolitan Commission to turn their attention to the condition of the localities in which cholera first made its appearance, and which it was generally found to select. This portion of the Report is prefaced by the proposition that—

"1. The manner of the introduction and extension of this pestilence in the various cities of Europe which it invaded was everywhere the same;" and that "the statements are strikingly uniform to the effect that it commonly made its first outbreak in the lowest and dampest part of the city it attacked, generally in the immediate neighbourhood of the river, and often on board of some ship lying near the shore." Thus Drs. Russel and Barry, the Commissioners appointed to examine on the spot the introduction and spread of the disease at St. Petersburg, state that the first case that occurred in that city "was that of a merchant who had arrived from Witagan on board a decked boat;" the second was that of a journeyman house-painter, "resident in the quarter where the barks lie, and who was taken ill about the same time as the merchant;" and the third "an invalid soldier, on duty in the same quarter, not far from the barks." They further state that "no direct personal intercourse could be traced between any two of the first five or six cases; but that it is certain that the first three were from the same district, that in which the suspected barks are stationed. This quarter is the easternmost of the whole city, the first you arrive at coming down the stream, and during the late and present perseverance of easterly winds, the very spot from whence effluvia of any kind might be most conveniently blown over the town." They add, "We are informed by Dr. Rehman that many have been taken ill on board the barks themselves." From the Report of Dr. Hamett on the cholera at Dantzic, it appears that the first two acknowledged cases of epidemic cholera occurred in the Harbour Canal, one German mile from Dantzic, in two *mud barges*, that these were followed by two others, apparently in the same locality, the next day; and that these cases occurred previously to the first arrival of vessels from Russian ports. It is stated by Dr. Becker, of Berlin, that the first cases of cholera in that city occurred among the skippers in the boats lying on the river Spree, which flows through the town, and in houses in the immediate neighbourhood of the river; and that the disease prevailed to a considerable extent in all those streets which lie along the navigated branch of the river. In Moscow, the place in which it principally prevailed, and was most mortal, was a low quarter, surrounded by a bend of the river Moskwa. At Breslau, it first attacked and principally ravaged that part of the town which is low and marshy, and which is the constant seat of intermittent fever. It is stated by Dr. Automarchi, that the condition of the houses in which cholera prevailed at Warsaw was little better than that of sewers.

The Report of the Central Commission of Paris states that the disease first appeared and subsequently spread, above all other places, in the greater number of

the *quartiers* situated upon the borders of the Seine, that it was most prevalent and most fatal in the low, close, undrained, and uncleansed localities.

In England the cholera first broke out in the port of Sunderland, and on board of vessels which were supposed to have brought the disease from some infected place on the Continent; but on a close examination of the facts, not only could no evidence be adduced to justify this suspicion, but, on the contrary, it is declared in the most positive manner that the suspected vessels had neither come from diseased ports, nor had any cases of cholera on board.

In its subsequent progress through the country, it generally first appeared in the neighbourhood of rivers or marshes, and principally raged in low and damp localities, particularly where these were also the outlets of filth. In Carlisle, for example, it is stated that it first broke out "near a mill, and raged down the damside, few cases occurring in any other part of the town."

Mr. Robertson, in his Report on the sanitary condition of Manchester, after stating that cholera "appears to have generally, in Europe, followed the track of rivers and water-courses, and in cities and towns kept in a remarkable manner to the neighbourhood of sewer-mouths," adds, "as far as my knowledge of cholera extends, in our Lancashire towns it manifested itself more than elsewhere, along the water courses (including docks, wharfs, districts occasionally flooded, &c.), and with peculiar virulence near the outlets of drains. The progress of the disease in Manchester, from first to last, furnishes a comment on this remark. For example, in the New Bailey Prison, which stands within a few yards of the Irwell, there were no fewer than 60 cases; in Allen's court, situated between Long Mill gate and the Irk, and near the mouth of a large sewer, out of 17 seizures, in four houses, 14 died; in Back Irk street, in which a number of cases occurred, the only houses visited by the disease were close by the main sewer, which there burst into day, and ran above ground: the same remark applies in reference to cases in Little Ireland, on the river Medlock. Where the cholera broke out (as often happened) in places apart from the canals and streams, it was noticed that this, in most instances, was in yards, courts, and narrow streets, polluted by offensive cesspools, pigsties, and other sources of malaria, (some of which were too disgusting to be described,) or by open or obstructed sewers. In Warrington, where the disease raged destructively, it located itself principally in Bank street and other neighbouring low streets running into or near the Mersey—the whole quarter so notorious for its filthy sewers, as to receive the name of 'Sewer Island.' In Bolton, the number of cases did not exceed 50; but nearly all of them occurred in closes and entries adjoining a stream, into which a number of offensive sewers discharged themselves. Perhaps, however, the most striking illustration on record of the influence of ill-contrived sewerage on the origination of cholera, supposing the epidemic once prevailing, occurred in Liverpool. One morning it was discovered that several men had been seized with cholera, during the preceding night, on board a vessel lying in one of the docks. The men were sent to hospital; and the vessel having been immediately warped into the river, another ship with a healthy crew took up her station. The next morning all the hands on board were ill of cholera. On examining the dock, it was found that a large sewer discharged its contents under the spot where the vessel was placed. I give this most instructive fact on the authority of Dr. Gaultier, an accomplished physician (since deceased), the author of a valuable work on the 'Origin and Progress of Malignant Cholera in Manchester,' published in 1833."

In a Report on the sanitary condition of the labouring classes of Tain and Easter-Ross, by Mr. James Cameron, it is stated that in 1832 cholera appeared in Easter-Ross, during the fishing season; that it was, with few exceptions, confined to the fishing villages; that in the remote village of Inver, situated on the low sandy shore of the Tain Frith, and notorious for its malaria, its ravages were fearfully rapid, having cut off nearly one-half of the inhabitants; while the town of Tain and most of the rural districts escaped.

To the same effect is the observation of Mr. George Sheward, in the west of England, who states that he was parish surgeon at the time that cholera made its appearance in Upton-upon-Severn; that this town is situated upon the bank of a large navigable river, and is liable to a constantly changing population, many of the lower orders depending on the river for support; that nearly three per cent.

of the gross population fell victims to the disease within the short space of three weeks, but that its ravages were entirely confined to the lower classes; that every case fell under his notice; that the most diligent inquiries led him to believe that the disease takes generally the course of navigable rivers, and that it was so in the present instance, though its march was erratic; one case breaking out near the river, another more in the town; but in almost every one in the houses of persons who worked by the water.

Mr. Bowie, who appears to have had the first case of cholera that occurred in the metropolis, gives evidence to the same effect. He "was practising near the river, in East Smithfield, when the cholera arrived in the metropolis in 1832. Thinks he had the first case of it. It was that of a seaman, named Daniel Barber, mate of the 'Felicity,' of Limerick, which had come to London direct from that port, and had lain in the river three weeks prior to his being attacked. There was no cholera in the place from whence this ship had sailed; there was nothing particular in the condition of the ship itself; she had lain in the river three weeks before cholera broke out." "I am not quite certain," continues this witness, "but I think the second case was a seaman named Thomas Skowes, of the 'Evander' of Aberdeen; and the third was the mate of a Scotch vessel, lying likewise at the Hermitage." He further states that the cholera, having spread from Wapping along that side of the shore, including Limehouse, crossed to the opposite side of the river, namely, Rotherhithe and Bermondsey; that it then attacked the lower parts of the borough of Lambeth; next, the lower parts of Westminster; then it extended along the Fleet ditch, and thence passed into the City.

Other witnesses confirm the correctness of these statements. Thus Mr. Wagstaffe, who is practising in Bermondsey, Southwark, and Lambeth, and who saw very much of cholera, observed its course to be along the side of the river, and principally in low and damp situations.

This is entirely in accordance with the history of the origin and progress of the cholera in the country which may be considered as its birth-place; for all accounts from India agree in stating that it first breaks out and principally prevails in low and marshy situations, and particularly near the banks of rivers; that whenever a village or military station lies upon or near low, marshy, or damp ground, the occupants suffer in direct proportion to their proximity to such a situation; and that when a regiment has been encamped, one part on high and dry land and the other part on a morass, or on the bank of a river, it is constantly observed that the former has remained healthy, while the latter has suffered severely from this disease.

The history of cholera in this respect seems to bear a close analogy to that of fever. Thus Sir John Pringle, in his account of the diseases of the army during the campaign in Flanders, states, that when the army were encamped along a canal, or on damp and marshy ground, the effect was seen in the sudden seizure of the men with fever.

2. The second proposition of the Report is to the effect, that "there is no evidence that cholera spreads by the communication of the infected with the healthy." This proposition is supported by the following evidence:

When cholera broke out in Cairo in 1831, two *cordons sanitaires* were established between Cairo and Alexandria, but they did not prevent the disease from extending to Alexandria. On the 21st of August, two or three of the soldiers were seized with the disease; on the morning of the following day the cases had increased to 22, and by the afternoon of that same day they amounted to 45. Among these, one which proved rapidly fatal, occurred in the palace of the Pacha. Within the space of five days after the disease broke out in Cairo, it had spread over the whole of Lower Egypt, making everywhere nearly equal ravages, and nearly, at the same time, infecting Mansoorah, Fua, Alexandria, Rosetta, Burlos, Damietta, and all the towns and villages of the Delta. Again, it is stated by the late Sir John Lefevre, physician to the English embassy at St. Petersburg, that within a few days of the cholera breaking out in that city, it had spread so widely and so generally as to preclude all idea of its propagation by infection, and this is confirmed by the reports of the English Commissioners, Drs. Russell and Barry. A similar account is given of the manner of its spread in Dantzic. At Vienna the disease first broke out on the 13th of September; on the 14th it had extended to six



quarters of the city, and on the following day it had spread through all the rest. In Paris it was rumoured that a case had occurred in the Rue des Lombards as early as the middle of February, but this was doubted. Four cases, however, were observed in the interval between the 13th of February and the 26th of March, all of which occurred in the neighbourhood of the Seine, in the quarter de la Cité and in the quarter de l'Hôtel de Ville. On the 27th, six persons were attacked simultaneously; on the 28th, 22 more were seized; on the 31st, the number had increased to 300, and out of the 48 quarters of Paris, the disease had invaded 35. In 18 days after the first invasion of this plague, namely, on the 14th of April, there were from 12,000 to 13,000 sick, and 7000 persons had already perished. At this terrible period of the epidemic, 1000 persons sometimes perished in a single day, and to be struck with the pestilence was, in general, to be dead in a few hours.

The Report goes on to argue, that "while the manner of the invasion and extension of this disease thus precludes all thought of its propagation by the communication of the infected with the healthy, there is another fact which is altogether irreconcilable with the notion of contagion, namely, that as no human means have succeeded in excluding it from particular spots, so no extent of communication with the sick has been able to carry it into other places."

In support of this proposition the Commissioners quote M. Londe, the author of a French work on Hygiene, who says, "In the north, while three lines of troops have been unable to arrest its progress, it has often passed over large tracts without infecting any intermediate place, and without following collateral lines. At other times it has been concentrated on a population which has continued to keep up free communication with the neighbourhood without at all extending itself to that neighbourhood. In France, for instance, where communication with the infected has been everywhere entirely free, there are departments, parishes, towns, and even villages, which have never had a single case of cholera, though these different localities have been sometimes inundated with persons who had fled from places devastated by the disease. Thus, according to M. Monfalcon, during the prevalence of cholera at Marseilles in 1835, Lyons alone received upwards of 10,000 immigrants from that town, and Lyons has never been attacked by cholera. Sometimes, also, portions of certain towns, though they maintained an unrestrained communication with surrounding districts decimated by cholera, were never affected in the slightest degree. At St. Petersburg, one of the islands in the Neva enjoyed this complete exemption from the invasion of the disease, and this was also the case with the faubourg Leopoldstadt at Vienna. Hence the non-transmissibility of cholera, in any manner whatsoever appears to us to be a demonstrated fact."

In like manner, Mr. Greenhow, after refuting the notion that it was imported into Sunderland by shipping, and stating that the strictest inquiries respecting the origin of the first cases, have failed to obtain the slightest evidence of their having arisen from any infected source, insists upon "the broad fact, which is totally irreconcilable with contagion, that numerous cases have occurred simultaneously at distant points, where no communication could by possibility have taken place;" and goes on to state, "that when several members of one family have been attacked, it has usually been either so precisely or nearly at the same point of time as to forbid the belief of one having communicated the disease to another." "That in the hospitals at Newcastle and Gateshead, no case has occurred of illness arising from attendance on the sick, either in the persons of the nurses, the resident apothecaries, or the attending or numerous succession of visiting members of the medical profession;" and that "those most exposed to contact with the dead, as medical men, in pursuing post-mortem examinations, have not, in any instance, suffered."

With reference to the first appearance of the disease in Great Britain, Dr. Ferguson, Inspector-general of Hospitals, observes.—"Amateur physicians from the Continent, and from every part of the United Kingdom, eager and keen for cholera, and more numerous than the patients themselves, beset and surrounded the sick in Sunderland with all the fearless self-exposing zeal of the missionary character, yet no one could contrive, even in the foulest dens of the sea-port, to produce the disease in his own person, or to carry it in his saturated clothing to the healthier

quarters of the town where he himself had his lodging." And he proceeds to point out the fact so strongly at variance with the idea of contagion, that though the first appearance of cholera in England presented a fair *primâ facie* case of imported contagion, nevertheless, at the very period of its thus breaking out in Sunderland, "a case equally as fatal and severe showed itself in the upper part of Newcastle, ten miles off; another equally well marked, in a healthy quarter in Edinburgh; a third not long before in Rugby, in the very centre of the kingdom, and a fourth in Sunderland itself, as far back as the month of August, as well as many others in different parts of the country."

In the two remarkable cases already stated, that of the isolated village of Inver, where it swept away nearly one half of the inhabitants, not a single case occurred in the town of Tain, in the immediate neighbourhood; and in that of Upton-upon-Severn, not a single case of infection could be traced, either to contact with the living or dead body or with the clothing.

But, perhaps, the most striking and important demonstration in England of the fact that cholera does not spread by contagion, was afforded by the town of Birmingham. In its near vicinity, Bilston, seven or eight miles distant, with daily and hourly communication going on by road and canal between the two places, cholera prevailed more virulently than in any town of the kingdom. The people at Bilston were obliged to send over to Birmingham for coffins, as they could not be made fast enough in that town. The disease also prevailed in the townships around Bilston, but in Birmingham, with its 160,000 inhabitants, there was scarcely a single case of cholera originating in the town; the few cases that occurred there having been imported, especially along the canal, from Bilston; the persons having been clearly attacked by the disease in those localities, and then going to Birmingham, where the symptoms broke forth: but we are informed that upon a close inquiry not a single instance could be found where the disease had spread from the infected to the healthy.

The Commissioners sum up this part of their report by stating that "every witness examined by them appears to have arrived at the most clear and decided conviction from what was uniformly observed of its progress in the metropolis, that it did not spread from the communication of the infected with the healthy." And they add a very remarkable fact, on the authority of Mr. Bowie, to the effect that the crew of a vessel, all of whom had assisted in waiting upon a boy, escaped the disease, while the captain, who showed extreme apprehension, but had never gone near him, was attacked on shore.

3. The third proposition established in the report is to the effect that "cholera observes in its progress the laws of ordinary epidemics, being influenced by the same physical conditions, and attacking similar classes of persons."

These conditions may, according to the commissioners, be comprised in impure and humid air, and unsuitable or insufficient food and clothing, ill-constructed dwellings, and defective appliances for the regulation of warmth or protection against cold. The want of sufficient and proper food, it is argued with justice, is an agent of very inferior power to the habitual respiration of impure air; and it is justly affirmed, that "in the present state of most towns and cities, the number of persons whose constitution is enfeebled by want of food, compared with the number whose vital energy is depressed by want of pure air, is found to be an exceedingly small minority," an assertion which is borne out to a certain extent at least, by the fact that the population contrives to spend 24,000 000*l.* per annum on ardent spirits, and nearly an equal amount on tobacco and fermented liquors.

The Commissioners proceed to state that typhus fever may be taken as the type of the entire class of epidemic diseases that infest this country, that the *habitat* of typhus is that of the class; and that the conditions which favour its spread, and convert it into a pestilence, are equally favourable to all other pestilences. Those conditions being in the metropolis, as in every town and city, defective house and street drainage and cleansing, involving a scanty and insufficient supply of water. The evidence that the track of typhus is everywhere, the domain of filth being taken for granted, the report proceeds to prove that this was also everywhere the precise track of cholera.

It has been already seen that while cholera generally followed the track of rivers and water-courses, it had a marked preference for those portions of this

track which were at the same time the outlets of filth, being remarkably prevalent and fatal in the neighbourhood of sewer mouths. Mr. Robertson's evidence in reference to the large towns in Lancashire, already cited, was decidedly to this effect; so also is that of Mr. Bowie, who, speaking of the first case of cholera on board the "Felicity," says, "The neighbourhood where this case occurred was one of the dirtiest along the river. What were called the 'bone vessels,' vessels employed to carry old bones for manure, usually lay there, and some of them lay there at the time. The stench was exceedingly sickening, and was perceptible at a great distance. Such was the recklessness of the crews of these vessels, that I have frequently seen them using bones as fuel, and cooking their provisions with them, the most offensive smoke penetrating, meantime, into the houses along the shore. Putrid carcasses of dogs and cats, and other inferior animals, likewise the refuse from the shipping in the neighbourhood, thrown into the river, or left on the muddy beach by the tide, were allowed to remain there, deteriorating the atmosphere. The whole of the coast, extending from St. Katharine Docks to Wapping, was very bad, with the exception of a few houses at and near the entrance of the London Docks."

In this same locality occurred the next cases of cholera, one of the sufferers stating that he had got up early one morning and gone on deck; that the smell from the bone vessels lying a-head was so bad that it made him feel sick, and that he had never been well since.

"The condition of the houses of the labouring population in this district, through which cholera spread with great rapidity, was," continues this witness, "extremely bad. It was the practice to pump the water out of the cellars, which had got up into the houses by infiltration from the river, or more frequently flowing in through the house drains from the sewers when the tides forced back the water into the house. The stench from the water pumped out from the cellars was often intolerable; so much so that I was accustomed to go out of the way to avoid it. Cess-pools were general, the contents of which percolated through the substratum, and the river water percolating through the substratum carried with it the matter of the cesspools."

This witness adds, that in his opinion "cholera took the place of typhus, affecting the same class of persons, and being influenced by the same class of circumstances."

Dr. Murdoch gives a similar account of the state of Rotherhithe: "In this district," he says, "open ditches received the contents of the privies, the privies hanging over the ditches; the paths in front of the houses were unpaved and filthy; some of the dwellings were wretched hovels. Typhus fever is always most prevalent in these filthy places, when in the neighbourhood at all; and were cholera to reappear, it would follow the law of typhus and typhoid fever, and first visit such neighbourhoods."

Of Southwark, Mr. Leadam says: "This was certainly one of the districts the most severely visited by cholera. The disease prevailed chiefly in the filthy dens which we have about us, in the close courts and alleys. The cholera track and the typhus track in this district were identical."

Mr. Hooper states, that in the parts of this district attended by him, the majority of those attacked were the inhabitants of the narrow streets and the close courts and alleys of the parish, living in filth, and breathing a confined and impure air. Many of their habitations had not even cesspools: the soil was seen oozing through the pavements of the courts. Where there were cesspools they were in a very bad condition, seldom or never emptied. Within the dwellings there was no boarding to the floors of many of the houses, the inmates sleeping on the earth on a few shavings. "I will mention," continues this witness, "Three Tuns court, in White street, in which there are about 15 houses, and probably 150 inhabitants. There is but one privy, and that without covering. The fluid soil is running down the court in front of all the houses. Several of the houses are entirely without windows or floors, that is, without boards on the floors. I could adduce examples of other courts not quite in so bad a condition, but still deplorable. These are the constant abodes of typhus, and these were the places where cholera prevailed. Few or no cases of typhus were observed while cholera was at its highest; this disease taking the place of typhus, attacking the same description of persons, and prevailing in the same localities."



"In the parish of Christ-church, in this same district," says Mr. Doubleday, "and in the neighbourhood of Broadwall, there are open sewers. At Brunswick Place there is another. In these neighbourhoods the cholera was unusually severe; in one row of houses, within two yards of the sewer, houses which are very miserable as regards size, ventilation, and means of cleanliness, the mortality was excessive; as many as five died in one house. When certain atmospheric conditions prevail and typhus arises, it is always found much more in these districts, and the result is more fatal. If cholera should revisit the metropolis, it would certainly be that the cases would there be more numerous and fatal."

"In Lambeth," says Mr. Wagstaffe, "in the streets, courts, and alleys in which cholera principally prevailed, the drainage was extremely bad; the privies were often in the cellars. I have myself passed through two feet of water to get to the houses, being obliged to walk along planks. . . . Cesspools are general in the district, and I have often seen the soil from these cesspools swimming about in the water. Whenever typhus is prevalent in the metropolis, it is invariably found in these localities, and common fever is very apt in these places to assume a typhoid type. This is the case at the present time with several cases now under my care. Scarlet fever, measles, and small-pox also are very apt to become malignant here under certain atmospheric conditions. These localities, in which typhus is constantly present, are the very localities in which cholera chiefly raged. I have at the present moment many cases of fever in the very places in which cholera was most prevalent. This autumn, diarrhœa and dysentery have also been prevalent there, and some cases were so similar to Asiatic cholera that I have asked some of my professional brethren to go and see them; two of these cases were fatal. They had, in fact, all the characteristic symptoms—vomiting, diarrhœa, with rice-coloured evacuations, cramps, suppression of urine, the particular sunken countenance, giving the expression of age to the patient, with a livid or even blue colour. If cholera were again to reappear, these would be the places which it would first visit, and in which it would be most prevalent and fatal."

Mr. Simpson, of Bloomsbury, being asked, with reference to St. Giles', among what description of persons, and in what localities, were the chief attacks of cholera? answers, "Precisely the same description of persons and in the same localities where typhus, influenza, and scarlatina, assume the putrid type."

The water supply of these districts would appear, from the evidence of the same gentleman, to be on a par with the drainage and cleansing. "Very bad;" "pumped into many of the houses from the parts of the river where the most abominable impurities abounded." "The filthy state of the water in the rooms?"—"exceedingly filthy water, which has been used over and over again, the odour from which is most offensive"—these are some of the expressions made use of by the witnesses.

With regard to the existing state of these districts, the uniform testimony of the witnesses is to the effect "that although some old open sewers have been arched over, and some additional common sewers have been made, no real improvement to any considerable extent has been effected in their respective districts; and that almost invariably the additional sewers that have been constructed, not being supplied with a quantity of water sufficient to carry off their contents, and keep them clean, they not only do not accomplish any sanitary purpose, but, on the contrary, act as extended cesspools."

The Commissioners then proceed to embody in a series of tables some valuable reports from Sir William Pym, relative to the total number of cholera cases in the metropolis, reported to the Board of Health in 1832; a return of the number of deaths from fever in 1838, and a return from the Fifth Annual Report of the Poor Law Commissioners of the number of fever cases for the same year (1838) among the pauper population of the same 20 districts of the metropolis, from which the deaths from fever for the whole of the population has been taken. These tables establish to demonstration the general coincidence of the cholera track with the track of typhus, as attested by the witnesses from particular cases within their own observation. On comparing, in the 20 metropolitan districts, the proportion of deaths to the population from fever and from cholera, it appears that in the districts where the deaths from fever were the highest, as in St. George's-in-the-East,

Bermondsey, Southwark, Lambeth, Whitechapel, Stepney, and Bethnal Green, cholera was the most prevalent and fatal. In some of these places the deaths from fever and cholera were nearly equal, as in Whitechapel. In others, as in Bermondsey, Southwark, and Lambeth, there was an excess on the side of cholera. But there were places in which the deaths from fever absolutely exceeded those from cholera, as in Holborn, where the deaths from fever were 1 in 227, whereas from cholera they were only 1 in 594. In St. Pancras they were still further in excess, the deaths in this district from fever being 1 in 269, from cholera 1 in 933, and in Shoreditch from fever 1 in 256, and from cholera 1 in 1203 of the population, so that in the first case the deaths from fever were more than double the deaths from cholera, in the second case more than treble, and in the latter case nearly fivefold.

"Comparing the total of deaths from fever with that from cholera, in the two groups of districts, it appears that in the 15 districts in which the mortality was greatest, the deaths from fever were 1 in 237, and from cholera 1 in 258, whilst in the 15 districts of lowest mortality, from fever there were 1 in 494, and from cholera 1 in 358; the general average of the whole of the districts being from fever 1 in 319, and from cholera 1 in 296; so that the whole difference between the mortality produced by cholera and that produced by fever, is the difference between 296, the average deaths from cholera, and 319, the average deaths from fever."

With regard to the proportion which *attacks* of fever bear to those of cholera, it appears, that in a population of 851,229, there were of in-door and out-door paupers 77,186; and that out of this number of paupers, 13,972 were attacked with fever; whereas from the Cholera Return, it appears that out of a population of 1,486,020, only 11,020 were the subjects of cholera, being the total number of the registered cases of cholera occurring in the metropolis during the year 1832.

While the total number of attacks of fever is thus enormously in excess of the total number of attacks of cholera, the *absolute* mortality from cholera is not very materially in excess of that from fever, the proportion, as already stated, being as 296 to 319; but the *comparative* mortality of cholera is terrific; nearly one half of those that are attacked by this dreadful disease inevitably perishing, the utmost range, between its lowest and highest mortality, being that between 1 in 3.6 and 1 in 1.1.

Typhus fever, which since 1838 has been epidemic in the metropolis, has for the last three years been constantly on the increase. The admissions into the London Fever Hospital since April have exceeded by several hundreds those of any corresponding period, and, as is clearly shown by a table, has been increasing during 1845, 1846, and 1847, for corresponding periods of time in proportions represented by the average numbers 28, 32, and 34; 24, 28, and 44; 21, 31, and 66; and for the six weeks ending the middle of November, by 26, 48, and 80.

From these startling facts the commissioners draw the very reasonable inference that "the causes of epidemic disease continue to operate in the metropolis with unabated and even with increased force at the present time;" and "that were cholera to revisit it at the present time, with the existing predisposition to epidemic disease, it would come at a period peculiarly favourable to its extension."

The Commissioners conclude that portion of their Report which relates directly to cholera, by some suggestions respecting the measures of alleviation which may be adopted in anticipation of those permanent works of drainage and cleansing, which offer the best hope of preventing the advent and spread of the disease.

Reverting to the recommendation of the Central Board of Health in 1832, that a number of steady men, proportionate to the districts in which they are to act, should be appointed to lime-wash and purify, under the direction of medical authority, such apartments as may be pointed out by inspectors of the local Boards, they give it as their opinion that, by some modification of this plan, an efficient agency might be formed for the thorough cleansing, both of particular localities and of individual houses; but of the nature and extent of the additional arrangements which may be necessary, they are unable to judge until they shall have received a sufficient number of returns to the circulars addressed to the medical officers and the Boards of Guardians of the metropolis.

With regard, however, to the measure of alleviation chiefly relied on during



its last visitation, viz., the establishment of district cholera hospitals, they state that experience is by no means favourable to their re adoption, except under particular circumstances and modifications. The prostration of all the vital powers in a severe attack of cholera is often so great, that the mere assumption of the erect position for a few minutes appeared often to deprive the patient of the slightest chance of recovery. "The medical testimony is uniform in representing the fatigue of removal as highly injurious in great numbers of instances. It is often strikingly so in the advanced stage even of typhus. It not unfrequently happens that when a patient is removed to the fever hospital in an advanced stage of this disease, on opening the door of the carriage in which he has been conveyed he is found dead; and still more frequently it occurs that when he has not actually expired before he reaches the ward, and is placed in bed, he is cold, pulseless, and insensible, and never rallies, notwithstanding all that can be done to restore animation. In typhus this extreme debility does not take place for many days; often not until the end of the second or third week; but in a severe attack of cholera it occurs in two or three hours, and is sometimes present, in its highest degree, before there is time for the medical attendant to reach the bedside of the patient. This circumstance places the extensive employment of any remedy which involves exertion, or even slight motion, out of the question." This statement is fully borne out by the evidence of the medical witnesses who have had the greatest experience on this subject, which evidence is given at length at pp. 19 and 20 of the Report.

Experience having thus shown that cholera hospitals failed in accomplishing their object, the Commissioners recommend that the best provision practicable should be made for rendering effectual assistance to the individuals who may need it at their own houses. This, in their opinion, would be best effected by the selection of proper persons, who may be instructed as nurses, and engaged to devote their whole time to attendance on the sick at their own habitations, under the directions of the medical officer. Prompt assistance might thus be given to the patient without subjecting him to any risk from bodily fatigue, and without anything being done calculated to excite apprehension or alarm; at the same time that the curative measures employed by the medical attendant would be administered under circumstances peculiarly adapted to ensure their success.

The adoption of the principle here indicated, that of sending competent persons to attend the sick, under medical direction at their own abodes, would be attended with this further advantage—that all the means recommended for cleansing the interior of the house, and for maintaining the atmosphere of the sick room in the highest attainable state of purity, might be most efficiently carried out by the same agency.

Though, for the reasons just assigned, the Commissioners deprecate the removal of cholera patients to separate cholera hospitals, they recommended that, in cases of extreme destitution, the cholera patients should be sent to the fever wards of the new union-houses, after those establishments have been inspected by officers specially conversant with warming, ventilation, and other structural arrangements.

The Commissioners then state it as their opinion that there is but one safeguard against the cholera, as against other diseases of the same class, viz., such sanitary arrangements as will secure the purity of the atmosphere, particularly by the immediate and complete removal of all filth and refuse, and that not only from the principal squares and thoroughfares, but also from the streets, courts, and alleys of the lowest portion of the population.

The chief measures of prevention are cleansing and ventilation, carried out concurrently and skilfully performed; or if the external atmosphere is not pure, the ventilation of houses may be the very means of producing and aggravating disease.

The prevention, as far as may be of overcrowding is also insisted on as a sanitary measure, and the opinion of the Cholera Commission at Paris and the experience of Breslau are cited in confirmation of this view. The Commissioners, however, in reference to this great evil, say, "There appear to be no available legal means for the immediate prevention of overcrowding; all we can do is to point it out, as a source of evil to be dealt with hereafter."

As an evidence of the preventive efficiency of cleanliness, it is stated that the German colonists in Galicia, who were distinguished by habits of regularity and



cleanliness from the Slavonic population, were distinguished amidst that population by an immunity from cholera.

The measures of prevention thus pointed out, if not warranted by the presence of cholera, would, as Mr. Bowie justly observes, exercise a most beneficial influence in the prevention of typhus fever; and the same witness gives a striking confirmation of his views in the case of the model lodging-house in Glasshouse yard, where means have been adopted to secure cleanliness and effective ventilation, so that "whilst fever has been prevailing to a very great extent in Glasshouse street and its adjacent courts and alleys, and the verdict of a coroner's jury has been given that disease and death have been the consequence of breathing impure air, there is not at present an individual under medical treatment in the building, nor has there been a single case of fever there for upwards of four months. The only deaths which ever occurred among the lodgers were two children, labouring under hydrocephalus internus when they were admitted, and an aged mutilated seaman, who had long been affected with hydrothorax and disease of the heart." Such facts as these certainly warrant Mr. Bowie in believing that typhus fever "might be as completely put an end to in houses, villages, and towns, as the ague has been in many parts of the country." Mr. Liddle, another witness, the medical officer of Whitechapel Union, who has already contributed one or two very striking statements as to the efficacy of cleansing, drainage, and ventilation in banishing fever, and reducing the amount of disease, adds the following fact: "That Hairbrain court consists of 13 houses; that in this court he has attended 22 cases of typhus within the last six months; that during the prevalence of fever this place was without drainage, and without water, and very badly paved and cleansed; but that recently it has been drained into the new sewer in Blue Anchor yard, and that since this was done not a single case of fever has occurred in this court. In like manner in Cooper's court, which consists of 12 houses, he has attended 29 cases of fever within the last six months; the condition of this court was precisely similar to that of Hairbrain court, but Cooper's court having been drained, fever has taken its departure from this place also."

The Commissioners suggest that the principle of flushing may be immediately applied to the draining of courts and alleys, and the rapid and safe removal of decomposing refuse, but that this can only be effectually done by a single body, with which voluntary associations of district visitors or local boards, might co-operate with effect in carrying out measures for the removal of nuisances. and which might make early agreements with the several water companies for the necessary supplies of water: and the Commissioners state that they have had detailed measures placed before them for the safe and prompt removal, by the free use of water, of the soil of cesspools and privies in the worst localities, and the collections of filth in their dirtiest courts and alleys.

The following are the general conclusions at which the Commissioners arrive:

"That amidst the town populations the cholera visits with most severity the same classes of persons and the same places, and is governed nearly by the same circumstances as typhus.

"That it has been proved by experience that those circumstances are generally removable by proper sanitary arrangements, and that typhus is to a great extent preventible; and we have every reason to believe that the spread of cholera is preventible by the like means, namely, by general and combined sanitary arrangements.

"That these arrangements, instead of being incidental and collateral to other measures, are paramount, and principal, and effective, not only against cholera, but also against other epidemics.

"That when cholera first appeared in this country the general belief was that the disease spreads principally, if not entirely, by communication of the infected with the healthy, and that therefore the main security of nations, cities, and individuals consists in the isolation of the infected from the uninfected—a doctrine which naturally led to the enforcement of rigorous quarantine regulations; the establishment of military and police cordons; the excitement of panic; and the neglect and often the abandonment of the sick even by relations and friends.

"That since opportunities have been obtained of a closer observation of the character of this disease, and of the mode in which it spreads through continents,

nations, cities, towns, and families, facts have been ascertained which are incompatible with the foregoing view of its mode of dissemination and of its prevention.

"That the disease is not, as it was then generally supposed to be, contagious, and that the practical application of that doctrine did no good, but was fraught with much evil.

"That when it previously visited this country it was believed that the most powerful predisposition to this disease is induced by improper or deficient food, and that, for this reason, its chief victims are found among the poor; but it is now universally admitted that a far more powerful predisponent is the habitual respiration of an impure atmosphere; that the highest degree of susceptibility is produced where both these conditions are combined, that is, where people live irregularly, or on unsuitable diet, and at the same time filthily; and that, in places in which a great degree of cleanliness is maintained, the poor as well as the rich enjoy exemption from this disease.

"That on an examination of the actual state of the back streets, lanes, courts, and alleys of the metropolis, it is found that in general little or no improvement has taken place in their sanitary condition since the prevalence of cholera in 1832; and that were this disease again to break out in the present state of these localities, there is no reasonable ground to suppose that the pestilence would not spread as extensively and prove as fatal as on its former visitation.

"In regard to this disease, we fear that complete measures of prevention must be eventual on the combination of works, which must be the subject of further investigations; but in respect to the immediate and special measures available for the prevention of the cholera, we find that such would be measures of cleansing of whole lines of sewers, from their commencement, through the several districts to the outfalls; the cleansing of cesspools (wheresoever it may be effected into the sewers), and the removal of whatsoever may be removed in suspension in water in the various modes of flushing, by the use of additional and abundant supplies of water, and we find—

"That it is expedient that a Commission for the entire drainage of the whole of the metropolis should be appointed, with a special view to such measures, and with aid to carry them out.

[Such a Commission, embracing all the districts, with the exception of the city of London, has been lately appointed, and is now actively engaged in carrying out the recommendation of the Report.]

"With respect to measures of alleviation of cholera we find—

"That it is one of the peculiar characteristics of this disease, that it sets at defiance, to a great degree, the resources of medical art and science, as is too fully proved by the fact that, under the most favourable circumstances, of those whom it attacks there perish one out of three, or nearly one out of four, and under the most unfavourable circumstances nine out of ten.

"That still there can be no doubt that individuals are saved, who would otherwise perish, that are early placed under favourable circumstances and judicious medical treatment.

"That although the removal to cholera hospitals, unless at a very early period of the attack, and unless the situation of the hospital happened to be highly favourable, was proved by experience to be injurious rather than beneficial, yet among the classes most subject to this disease, there must be individuals in a state of such utter destitution as to render some provision absolutely necessary.

"That it is desirable that existing establishments for the reception and treatment of the sick be immediately inspected by officers especially conversant with warming, ventilation, and other structural arrangements, to advise on the alterations and adaptations necessary to afford effectual aid to the individuals who may require it.

"That where there is at present adequate accommodation by proper hospitals for fever cases, such accommodation will in general suffice for cholera, fever not being prevalent when cholera is epidemic, and fever cases being in general more numerous than those of cholera."

The remainder of this valuable Report consists of an examination of the practical working of the sewer commissions of the metropolis. The general conclusions are all that our limited space will enable us to notice. They are as follows:

"That unnecessary expense and inconvenience to the public is consequent on the division of the natural drainage areas among several district authorities, and that it is impossible that improved works of systematic drainage can be carried out under arrangements that geographically divide the lines of watershed and the out-falls between separate and conflicting authorities.

"That the works which the present district commissioners execute, and propose to execute, are uncertain, erroneous, and defective in their general principles of construction, injurious in their actions, and unduly expensive.

"That, after the authentic expositions which have been given of the principles of construction and management of improved works, the extensions of sewers or drains, accumulative of decomposing refuse, are acts of injury to the public health and of waste of the public money.

"That the execution by the district courts of commissioners of large works of drainage or sewerage, without reference to any general plan or survey, involves great risk of erroneous and imperfect works and waste of the rates they are empowered to levy.

"For the prevention of disease and the saving of health and life, by early carrying out efficient works of drainage, and diminishing the mass of atmospheric impurities, by which the public health is depressed, and, for the prevention of expenditure upon inefficient works, we feel it our duty to recommend an immediate exercise of the powers of the Crown, and

"That the several commissions appointed under its authority, in the metropolis, be recalled with the least possible delay.

"That the law of sewers, now administered by numerous persons in these separate districts, be confided to one body of commissioners for the whole of the metropolis.

"That to ensure executive dispatch, and obviate that weakening of responsibility which arises from its present division amongst large bodies, the commissioners should be limited in number; and competent, through their known attention to sanitary improvement, to select and sustain the labours of paid officers and the execution of works in the attainment of this their proper object."

This consolidation is suggested as a measure of immediate urgency to abate epidemic disease and to stay waste, and as essentially preparatory to further alterations which the Commissioners propose hereafter to submit for consideration.

The Commissioners wisely anticipate that the first work of the consolidated commission will be a general survey by the officers of the Royal Engineers, under the direction of the Board of Ordnance, as a measure of paramount and most pressing importance.

The expediency of making this survey of the metropolis, in the first instance is very properly urged, on the ground that the metropolis serves as an example and guide to the provinces. "The errors of the works of this class in the metropolis are literally copied and exaggerated in the provincial towns, where it is rare and accidental to meet with any improvements upon them. In the provincial towns, which had abundant sources of water-supply within reach, the pernicious system of intermittent supplies have been copied from the metropolis, to the injury of trading companies, the deterioration of the supplies, and double expense of works to the consumers."

The Commissioners, aware of the ignorant objection often advanced to the creation of new bodies on the score of expense, cite the remarkable example of consolidation afforded by the Metropolitan Road Commission for the management of the roads formerly administered by a number of local trusts comprehending the suburban parishes in the metropolis. Under that commission the roads have been improved, the tolls and the debts reduced, and the business of 100 miles of road transacted satisfactorily with less attendance and consumption of time on the part of the honorary members of the board than was previously required, by the defective dispatch of business, by any one of the numerous separate boards under which important improvements were found to be impracticable.

The Commissioners have yet to report on the commission of sewers for the City of London, on the water-supply, and surface cleansing and paving of the metrop-



polis, on the assessment and collection of rates, and on other important matters. These labours of the commission will have to be noticed in a future report. In the meantime the progress of the cholera on the Continent, and its now confidently reported presence in London, lends to this first Report of the Metropolitan Sanitary Commission an importance which will fully justify the details into which we have entered, at the same time that it must serve as an explanation and excuse for the omission of much important and interesting matter which would otherwise have found a place in this Report.

## APPENDIX.

### ON THE ANÆSTHETIC EFFECTS OF THE INHALATION OF CHLOROFORM.

THE discovery of this anæsthetic agent by Professor Simpson, and its public announcement having been made, when the arrangements of the present volume were nearly completed, we are compelled to devote but a few pages to its consideration; the importance, however, of the discovery, as a parallel to ether inhalation, is such, that we do not feel justified in postponing an account of it.

It appears from a pamphlet with which we have been favoured by the discoverer, Professor Simpson, of Edinburgh,\* that he had for some time been impressed with the conviction that some congeneric agent might be employed, which should be destitute of some of the disagreeable properties possessed by sulphuric ether, and he accordingly devoted himself to the investigation. The first suggestion of the particular substance *chloroform*, or *perchloride of formyle*, was made by Mr. Waldie, and the fluid itself was first manufactured for Dr. Simpson by Messrs. Duncan, Hockhurst, and Co., from whom we have received a sample.

*History and Preparation.*—*Chloroform* was first discovered about the same time by Soubeiran and Liebig, in 1831, and its chemical composition was ascertained by Dumas, in 1835, to be two atoms of carbon, one atom of hydrogen, and three atoms of chlorine ( $C_2 H. Cl_3$ ). It may be prepared in various ways—1. By distilling spirit of wine, or pyroxylic spirit, water, and chloride of lime, in certain proportions. 2. By making milk of lime, or an aqueous solution of caustic alkali, act upon chloral. 3. By passing a stream of chlorine gas into a solution of caustic potass in spirits of wine. Of these, the first is the most simple, and may be adopted by any practitioner with an ordinary knowledge of chemical manipulation. The formula for its preparation, as forwarded to us by Messrs. Duncan and Co., and which we have found both simple and effectual, is as follows:

Take chloride of lime in powder	lb. iv,
Water . . . . .	lb. xij,
Rectified spirit . . . . .	f. $\frac{3}{4}$ xij.

Mix in a large retort, and distil with a gentle heat, as long as a dense fluid which sinks in the water with which it comes over is produced. Decant the water, and rectify the dense fluid by agitating it with successive portions of strong oil of vitriol, and redistil from carbonate of baryta. This latter part of the process we do not regard to be essential, as we have employed the product of the first distillation with perfect success.

*Properties.*—Chloroform is a dense oily liquid, sp. gr. 1.48, does not inflame, by which it is distinguished from other fluids with which it may be confounded, and probably will, from its expensiveness, be adulterated (such as chloric ether), and boils at  $141^{\circ}$ . Its odour is somewhat ethereal, and when inhaled, it gives a pleasant sensation of sweetness in the mouth.

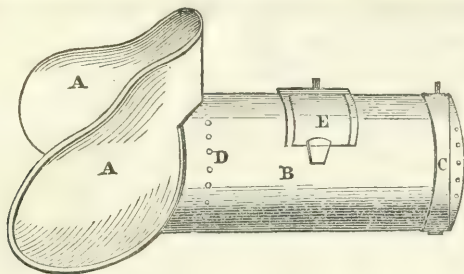
*Advantages.*—It has been brought forward by Dr. Simpson, and we believe justly, as a substitute for ether, for the following reasons: 1st. A less quantity is required to produce insensibility. 2d. Its action is more rapid, more perfect, and persistent. 3d. Recovery is usually more speedy, leaves fewer unpleasant feel-

\* Account of a New Anæsthetic Agent as a Substitute for Sulphuric Ether in Surgery, &c. By S. G. Simpson, M. D.

ings. 4th. It has the great advantage of not exciting irritation of the bronchial tubes, of being pleasant to the taste, and of not leaving a disagreeable taint upon the breath.

*Exhibition.*—One drachm sprinkled upon a piece of lint placed in the hollow of a funnel-shaped sponge, we have found generally sufficient. In one or two cases insensibility has been produced by three drops, in others we have seen as much as four drachms consumed. We should say, from the present experience of its effects, that one drachm will be found an average quantum.

Having observed, however, that the bystanders are often affected as well as the patient by the escape of the vapour from the sponge or handkerchief, and from motives of economy as regards the preparation, we have devised the following instrument, which may be made for three or four shillings in block-tin, and which has been perfectly successful. The diagram is about three times smaller than the original.



A, Mouth-piece, lined with wash-leather.

B, Body of the inhaler containing cotton wool.

C, Perforated lid for admitting air and putting in the wool.

D, Line denoting the situation of a second perforated plate, to prevent contact of the chloroform with the lips.

E, Small trap-door and lid for pouring the chloroform upon the wool.

*Effects.*—As of ether, the effects of chloroform are regulated by the peculiarity of the individual, but as a general rule there is no excitement, the patient going calmly as into a deep sleep, in the space of from  $1\frac{1}{2}$  to four minutes. We have, however, in one or two cases, seen some struggling before the supervention of complete insensibility. We have not as yet noticed any peculiarity in the eye which indicates the period of insensibility, but that period can generally be ascertained by the head falling as in sleep, and the patient remaining silent when spoken to. The pulse is but little affected, as far as we have at present been able to ascertain. When properly administered, and in a sufficient dose, the breathing is tranquil; we have, however, in one case, seen more complete stertor than under the influence of ether. In the same case there were also strong spasmodic movements of the limbs. These unpleasant symptoms soon subsided.

*Cautions.*—The liquid should be ascertained to be correct in composition (sp. gr. 1.48, and not inflammable). The sponge, or inhaler, should not be held at first too close to the face, as the vapour feels then unpleasantly *hot* to the bronchial membrane. It may be gradually placed close, but the fluid should not be allowed to touch the lips, as it will then produce vesication. In other respects, we believe that similar precautions are required as in the inhalation of ether. It will indubitably destroy life if too long persisted in. Short of this, we believe it to be capable of inducing unpleasant effects, as stertorous breathing in the case alluded to. We have known it also induce vomiting, and in the case of a lady, whose tooth we saw extracted under its influence, we had olfactory evidence of relaxation of the sphincters.

*Uses in Surgery.*—It is not our intention to relate the individual cases in which chloroform has been employed, we shall be content to state that it has been used in Edinburgh and London in operations for stone, amputations, tying nævi, &c.



*Uses in Midwifery.*—It has been used in midwifery by its discoverer, and by Dr. Protheroe Smith. Dr. Simpson states that in labour it does not require to be given in such large doses as in surgery.

*Uses in Medicine.*—Chloroform has been used successfully by Dr. P. Smith, in hooping-cough, dysmenorrhœa, colic and biliary calculus. In neuralgia, he has seen it stop the fit at once. In delirium tremens it has procured ocular sleep, after the failure of opium. He has seen a sick headache dispelled by a few inhalations. We have heard of the spasms of tetanus being relieved by it.

We apologize to the readers of the "Abstract" for the above imperfect account of this agent, rendered unavoidable under the circumstances of the publication of the present Volume, but we believe we have touched upon, though cursorily, everything of importance at present known upon the subject. We shall not fail in a future Volume to record the more matured experience of the profession. At present we may state, from personal acquaintance with the effects of chloroform, that it will entirely supersede ether inhalation, and its pompous mechanical adjuncts.

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HALF-YEARLY ABSTRACT  
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LIST OF BRITISH AND FOREIGN PERIODICALS REFERRED TO IN  
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BRITISH.

*British and Foreign Medico-Chirurgical Review.*  
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*Dublin Quarterly Journal of the Medical Sciences.*  
*Lancet.*  
*Medical Gazette.*  
*Provincial Medical Journal.*  
*Medical Times.*  
*Dublin Medical Press.*  
*Bell's Pharmaceutical Journal.*  
*Guy's Hospital Reports.*  
*Chemical Gazette.*  
*Chemist.*  
*British Record of Obstetrical Medicine and Surgery.*

AMERICAN.

*American Journal of the Medical Sciences.*  
" " *of Science and Art.*  
*Philadelphia Medical Examiner.*  
*New York Journal of Medicine.*  
*Boston Medical and Surgical Journal.*  
*Southern Medical and Surgical Journal.*  
*British American Journ. of Med. Science.*

FRENCH.

*Annales de Chirurgie.*  
" *d'Hygiène.*  
" *de Chimie et de Pharmacie.*  
" *des Maladies de la Peau.*  
" *Thérapeutique.*  
*Archives Générales de Médecine.*  
*Bulletin des Académies.*  
*Encyclographie Médicale.*  
" *des Sciences Médicales.*  
*Journal des Connaissances Médico-Chirurgicales.*  
*Gazette des Hôpitaux.*  
" *Médicale.*  
*Journal de Chirurgie de M. Malgaigne.*  
*Revue Médicale.*  
*Journal de Chimie Médicale.*  
*Journal de Chimie et de Pharmacie.*

GERMAN.

*Schmidt's Jahrbücher.*  
*Zeitschrift für de Gesammte Medicin.*  
*Muller's Archiv. für Anatomie, &c.*  
*Liebig's Annalen der Chemie und Pharmacie.*  
*Canstatt's Jahresbericht.*  
*Buchner's Repertorium.*  
*Haller's Archives für Physiolog. und Patholog. Chemie.*  
*Casper's Wochenschrift.*  
*Poggendorf's Annalen.*

N. B.—Every periodical here specified is consulted *directly* by the Editor and his coadjutors.

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#### ERRATA

In Vol. VI., p. 283, Par. 17, for "Dr. Thomas Addison," read "Dr. Thomas Williams."  
 Page 348, line 19, for "Dr. P. Smith," read "Dr. Simpson."

# ABSTRACT OF THE MEDICAL SCIENCES,

Sec. Sec.

## PART I.

### PRACTICAL MEDICINE, PATHOLOGY AND THERAPEUTICS.

#### SECT. I.—ZYMOTIC DISEASES.

##### ART. 1.—*Observations by Various Writers on the Treatment of Cholera.*

[The steady approach and expected arrival of this fearful pestilence, for the second time in this country, have given occasion for the publication of numerous opinions respecting its pathology and treatment. In the present department of our volume we have confined ourselves to the subject of the latter only, leaving the important questions of the causation and pathology of the disease to the Report.]

I. By E. A. PARKES, M. D.—Dr. Parkes divides the treatment of cholera into two parts, according as it is applied while the circulation still goes on with sufficient vigour to allow of absorption, and according as it is used after this period, when, from the arrest of the circulation, absorption is prevented. It is also evident, he observes, that, for practical purposes, there are two aspects under which every case of cholera must be viewed: 1st, with reference to the watery exhalations; and, 2d, to the deeper changes in the protein constituents, as opposed to each other: therefore two indications have generally been followed, and remedies have been given, either for the purpose of averting the purging, or of acting directly upon the latent changes in the blood which constitute the essence of the disease.

Dr. Parkes thinks that many of the apparent contradictions of treatment recommended by authors, are to be explained by the recollection of its pathology. Thus astringents have been found useful by those who have witnessed chiefly the slighter forms, in which the changes in the fibrine are moderate in intensity, and capable of gradual reparation, when the exhalation of serosity is arrested. Emetics and purgatives have been extolled by other observers, who have encountered the severer types, and who, recognising the comparatively slight character of the cases accompanied with great purging, believe that the chief indication was to bring on this symptom in the cases under treatment. Dr. Parkes thinks it undeniable that the arrest of the watery eliminations is, in the cases of inferior intensity, attended with positive benefit: he considers the opinion that vomiting and purging are salutary evacuations to be erroneous; but he does not look upon their arrest as synonymous with the cure of cholera.

Medical art has, according to the author, failed hitherto to arrest or contest the essential alterations in the blood; no medicine has yet been found which can counteract the changes in the fibrine, and nullify the first effects of the choleraic poison on the blood. The efforts of European science, on the contrary, appear to have been hurtful in many cases. The attempt to cut short the disease, and to rouse



the system from a condition erroneously compared to debility and exhaustion, has, he thinks, certainly often accelerated the progress of the disease.

In his further remarks, the author speaks more in detail, as follows:—

1. *Treatment of Cholera in the first period, while absorption is possible.*—The great indication is to prevent the passage of fluid from the alimentary mucous membrane, and from the skin. The two grand measures which, in the author's cases, seemed to effect this, were blood-letting and astringents. In addition, a strong stimulus at the very commencement was occasionally found useful.

Blood-letting is strongly recommended by Annesley, who calls it his "sheet-anchor," while Twining, in a more severe variety of the disease, found it comparatively useless. The author states, as the result of his own experience, that the benefit of blood-letting was more marked, according as the disease was in its earliest stage, and according as it assimilated to the several varieties of pseudo-cholera. In the latter cases it was often attended by striking results, especially when there were general severe spasms and a full pulse. Of all the astringents which have been used in cholera, he prefers the acetate of lead. He gives two or three grains, with a quarter of a grain of opium every half hour for the first two or three hours, then every hour for a variable period. It was often found that the vomiting first ceased, then the purging. The algid symptoms were unaffected by it, or by any other remedy. The cramps were best relieved by friction with opium, turpentine, &c.

2. The second indication during this period is to counteract the deeper changes in the blood; to this end the author mentions the following plans:

a. *Applications to the surface—warm and cold.* Warm baths, and warmth, however applied, were never found of the slightest service in true cholera. The warm bath sometimes depressed the patient. The author does not know of a single case in which it was beneficial. If warmth be used at all, he thinks it should be at the earlier stage, and in the form of hot air bath. Cold to the surface was more grateful to the patient than warmth, as might be anticipated from the way in which he throws off the bedclothes, so as to expose the surface freely to the air. Cold affusion, even in the last stage, two or three hours before death, sometimes caused the pulse to become perceptible.

b. *Remedies taken by the mouth.* The author considers that no one remedy is, as regards the present indications, better than another. He has given, in all stages, calomel, opium, hemp, camphor, quinine, creasote, tartar emetic, salines of all kinds, ether, hyoscyamus, &c. Large doses of calomel were found, in many cases, injurious.

c. *Enemata.* The author has used warm saline enemata, but without marked advantage.

d. *Remedies inhaled.* He employed the vapours of ether, ammonia, creasote, alcohol, iodine, and chlorine: of these, the only two of which he can speak in positive terms, are creasote and ammonia; their effect was unimportant.

e. *Galvanism.* No good result.

The author's conclusions as to the treatment of the early stages of cholera are:—

1. Blood-letting and astringents to arrest the passage of fluid from the alimentary canal.

2. Mustard poultices to the abdomen and cardiac region.

3. Cold affusion and cold drinks.

4. Diffusible stimuli, provided vomiting is not reinduced.

When vomiting and purging have been suspended, time should be given for the function of respiration to be properly performed. During this time the patient should not be actively treated.

II. *Treatment of Cholera in the second period, when absorption is very slow, or completely suspended.*—At the commencement of an epidemic some cases are met with, with symptoms so active as to bring them at once to this period, or a case may gradually merge into it. At this time the exhibition of medicines by mouth or rectum is perfectly useless. The only means by which medicines can be introduced into the system are by inhalation, or by injection into the veins. Of other remedies the author thus speaks:—

1. Blood-letting has been strongly recommended by several writers; the opinion

of the majority is, however, against it. It is exceedingly difficult to get blood in this stage; it flows guttatim, and the arm must be fomented to obtain blood even in drops. If, however, blood-letting does little good, I do not think it does any harm; and occasionally it seems to relieve the painful dyspnoea and oppression at the heart.

2. Emetics have been much recommended—the author has never observed much benefit from them.

3. He tried inhalation of various vapours in this as well as the former period, and with the same want of success.

4. When a case has reached the second period, it is almost inevitably fatal. Occasionally a patient rallies after many hours of apparently almost suspended circulation, but this chance is hardly worth anything. And yet, if the circulation could be partially kept up, every hour adds to the chance of success. If any means could be devised to restore in some degree the process of respiration, nature might overcome the chemical combination which the poison has formed with some constituent of the blood. This result (continues the author), the problem in the treatment of cholera, can only be accomplished by injections into the veins. [Saline injections, recommended by Stevens and others, were tried by the author with complete want of success, and he therefore determined to try the injection of an alkaline solution of albumen. The cases were all the worst stage, and deemed irrecoverable. They were five in number:—

In the first case, when in the last stage, a solution of sesquicarb. soda  $\zeta$ iv; chloride of sodium  $\zeta$ ij; albumen of one egg, water  $98^{\circ}$  Oiv, after filtration was slowly injected—some appearance of rallying followed, but the improvement was fallacious.

The second was also one of algide cholera. Like the other, the injection caused a remarkable rigor, and some reaction followed—this patient rallied, but died in the consecutive fever. This is the most favourable case the author has to record, as the others did not offer even this amount of encouragement of his design.]

In the consecutive fever, leeches should be freely applied; alterative doses of calomel, ipecacuanha, and colocynth are useful.

*Researches on the Pathology and Treatment of Algide Cholera, London, 1848.*

II. By Dr. GAVIN MILROY.—This author observes, that the first thing to be done is to have the patient at once stripped and enveloped in warm blankets. The application of bottles of hot water, bags of hot salt or bran to the feet, between the legs, and along the course of the spine, will always be useful in increasing the warmth of the general surface. This is a point of great importance; as the cutaneous circulation is all but arrested, and the blood is consequently accumulated in the internal viscera.

This preliminary point being attended to, he recommends, on the results of some experience during the epidemic of 1832 in London, the immediate exhibition of *saline emetics*. Without going so far as to say that the incessant vomiting, which generally constitutes so distressing a symptom of the disease, is a medicative effort of the system either to relieve itself of offending matters, or to rally the stagnant state of the circulation; he does not doubt that the practice, so often pursued, of seeking to arrest it at once by the exhibition of large doses of opium and other narcotico-astringent remedies, has been the cause of much disappointment, and not unfrequently too of very serious mischief. Common salt is at once the most convenient and the most useful emetic that can be employed. Let from a desert to a tablespoonful or more be dissolved in a tumblerfull of water, and drank off immediately; and let the dose be repeated again and again at short intervals, if it be speedily rejected without having induced the forcible contractions we desire. When this object is once fully attained, the incessant vomiting, which existed before, will, in very many cases, be found to be remarkably abated. Then is the time for the application of a stimulating *epithem* upon the abdomen, and especially over the epigastrium; and certainly nothing is better for this purpose than that which has been so strongly recommended by Dr. Copland, viz., a large flannel wrung nearly dry out of very hot water, and then moistened with spirits of turpentine: a portion of laudanum may be added to it at the same time.

In many cases, a strong sinapism will answer very well. The relief obtained from such applications is often most decided; not only is the irritability of the stomach sensibly quieted, but the excruciating cramps of the abdominal muscles are at the same time decidedly relieved. It, by the means now mentioned,—outward warmth, saline emetics, and stimulant fomentations of the abdomen—the vomiting has become much mitigated or checked, the incessant purging also will often be found, at the same time, to have diminished. Should the purging continue, notwithstanding the abatement or cessation of the vomiting, the indication will be to act, in reference to the one symptom, upon the same principle which guided our practice in reference to the other. The bowels should be stimulated to energetic contraction; it is in this way only that the enormous draining from their mucous surface can be safely as well as effectually arrested. To attain this object, it will be wiser, on most occasions, to trust to enemata rather than to medicines exhibited by the mouth, in order to avoid all unnecessary distress of the irritable stomach. The injection may consist either of a strong solution of salt or of spirits of turpentine, mixed with gruel or any other convenient vehicle. It is doubtless well known to most medical readers, that one of the earliest and surest signs of favourable omen, in a case of Asiatic cholera, is the appearance of anything like bilious or fecal matter in the dejections. Hence it is that the practice of some of the most experienced men in the East Indies has been primarily and mainly directed to this end, and undue reliance has been placed upon the administration of enormous doses of croton oil and other drastic purgatives, either alone or in combination with opium. Speaking of opium, if opium is to be employed—and that it may often serve some useful purpose is not denied—let it be almost exclusively used as an outward application, or let it be administered only in small doses, and in conjunction with other remedies.

The author states that, whenever the vomiting has ceased or become sensibly abated, it will be prudent to begin the administration of some preparation of mercury. From five to ten grains of *calomel*, or double this quantity of the *hydrargyrum cum cretâ*, in combination with the carbonate of soda or magnesia, should be given immediately; and the dose repeated every three, six, or ten hours, according to the circumstances of the case. *Camphor* may often be advantageously added to these powders; or the different substances may be made up into pills with any of the warm essential oils. The effect of this treatment will be to excite the hepatic and pancreatic functions, and to induce a more healthy condition of the whole intestinal canal. The occasional administration of a stimulating enema will, at the same time, serve to bring down the vitiated matters, which, I need scarcely say, are almost always found to stand in need of evacuation after the immediate symptoms of the disease have been subdued.

To allay the intense thirst—which is often accompanied with a sense of burning heat in the region of the stomach—that is almost always present in cases of cholera, he recommends that effervescing draughts be prepared with the carbonate of ammonia, soda or seltzer water, iced water, water acidulated with the sulphuric or some other mineral acid, light well-fermented beer, or, in short, whatever may be most grateful to the patient, should be given without restriction; only cautioning him to take small quantities very often, rather than large draughts less frequently. On the whole, he thinks it better to avoid strong and spirituous stimulants, if these simple beverages suffice: and, in nine cases out of ten, the latter will be found to be quite as refreshing and exhilarant as the former, even when the system is in a state of great depression.

In the treatment of a disease like cholera, the ultimate as well as the immediate effects of our remedies should always be kept in view; and, considering the marked tendency there is to the supervention of typhoid phenomena upon the cessation of the primary symptoms, the prudent physician will prefer the use of those means that may be fairly viewed as counter-agents rather than as provocatives of the consecutive mischief. Doubtless, the suppression of the biliary and urinary secretions, and the consequent retention in the system of effete and noxious matters, that are continually being eliminated from the blood, form one of the chief causes of this secondary typhus; and there is good reason to believe that the tendency to its occurrence will be found to be exactly proportionate to the difficulty, or delay, with which these important functions are re-established. Of



course, therefore, special attention will always be directed to this point, immediately after the subsidence of the proper choleraic stage. It is unnecessary to particularise the appropriate remedies to be employed for such a purpose. Lastly, in closing these remarks, the author would again urge the necessity of husbanding the patient's strength with all possible care. Among other precautions, the patient should never be allowed to rise up, far less to leave his bed, when the calls of nature require relief. The exhaustion, caused by the neglect of this simple rule, has, in not a few cases, proved almost instantaneously fatal.

*The Cholera not to be arrested by Quarantine, &c., London 1847.*

III. By Mr. BELL.—Mr. Bell states that the obvious treatment is blood-letting, but not performed at any time, or under all circumstances. The time is indicated by him in the following words:

"When the exudations from the bowels or skin are flowing freely, and when the heart is heard struggling to overcome the load by which it is oppressed with unabated vigour; the lancet cannot be used too promptly; but when the attack has continued for four or five hours, when the purging has become less copious, and when, instead of manifesting a continual struggle, the heart appears to be only capable of intermitting exertions," then Dr. Bell advises to trust to medicine alone; but if, after a period of quiet, the struggle recommences, he bleeds without hesitation.

When bleeding is inadmissible, the author's treatment is dictated by his view of the pathology of the disease, viz. that it is a species of ague. Quinine is the remedy; but he states that given alone it always fails, but, on the contrary, when combined with iron, it is eminently curative.

His ordinary prescription is: Quin. disulph. gr. xij; ferri sulphat. gr. ix; acid. sulph. m. xl; aquæ Oiss. The dose is not stated. He has generally found the first dose suspend the vomiting.

Of stimulants, he remarks that they are useful before congestion is established, but hurtful afterwards. Calomel is entirely disapproved of.

*Medical Gazette, Jan. 1848.*

IV. By Dr. BLACK.—[Referring to his experience of the former outbreak of the disease, Dr. Black, of Manchester, observes as follows:]

The mild or gently incipient stage of the disease was easily and successfully treated; but the asphyxiated cases were nearly hopeless. The vomiting and purging were not so formidable to combat as the state of the circulation. In this latter stage various remedies have been used, for which the journals may be referred to; but from all that I have seen and heard, I incline to a small bleeding in stout subjects; smart doses of calomel and croton oil, repeated to the second or third time; then small doses of the former, with capsicum and camphor; non-purgative saline medicines, combined with ammonia. I have seen benefit from an emetic of salt and water at the commencement, followed by small doses of oleum terebinthinæ, or chloric ether. No opium, unless there were spasms, or active purging or vomiting, with heat of body. I have seen this drug tend to narcotise; and if consecutive reaction takes place, the opium seems to be absorbed nearly all at once, and the brain is consequently and evidently enervated and overcome. Brandy has also the same effect in a less degree, and should be very sparingly exhibited. Enemata of hot water, salied, or with oleum terebinthinæ, a little chloride of lime, or with some spirits, or one entirely of hot beef tea, have been used with more or less relief. I would inject much, and leave the patient to drink warm water *ad libitum*, to distend, warm, and promote circulation in the portal system, which is allowed, on all hands, to be in a much congested state; besides, the mere dilution of the morbid secretions of the bowels seems to do good. I am doubtful of the application of great external heat being of much avail, beyond an occasional sinapism to the epigastrium, hot bran poultices along the spine, or frictions with hot and stimulating oils, as oil of camphor, oil of succinum, oil of turpentine. I fear too much heat exhausts the small remainder of vitality in the skin and whole frame, and excites the heart to undue action on its enervated and carbonised blood. The capillary system is no longer, or, at the time, under

the call of such a stimulus. The vitality must be first diffused; and if the heat applied be too great, it is exhausted instead of being diffused.

*Prov. Med. and Surg. Journal*, Jan. 26, 1848.

V. By Dr. PATRICK FRASER.—This author remarks that the primary step is to renew and retain the animal heat. Of stimulants, for this purpose, he prefers the carbonate of ammonia: small and repeated doses of brandy and water proved, in many cases, a valuable adjunct. No benefit was observed from effervescing draughts. Copious salt-and-water enemata served, in some cases, to rouse the patient.

In eight cases cold water was allowed *ad libitum*; but all died. Transfusion, with the following injection, was practised in a few cases: R. Sodii chloridi ℥ij; sodæ carbon. ℥ij; aquæ Hvj, at the temperature of 112° F. (?) In one case only was it beneficial.

The author's observations would lead him to be very cautious in the exhibition of opium alone, except in the spasmodic form of the disease. In a state of collapse he thinks it decidedly injurious. The case is different when the patient complains of slight purging, and occasional nausea and vomiting. If at this period five grains of calomel and one of opium be given, with a frequency guided by the symptoms, and assisted by chalk mixture, the disease becomes manageable.

Calomel, uncombined, is regarded with favour by the author. He has seen it, in large doses, useful in calming irritability; and thus powerfully aiding further treatment. If ptyalism is induced, a cure almost always ensues. The author speaks of cases in which 330 and 550 grains were taken in forty and fifty hours respectively. These cases recovered.

The author does not approve of general bleeding, excepting in spasmodic cholera. Dry frictions were found useful; as were also large sinapisms and terebinthinate embrocations.

*Medical Gazette*, March 3, 1848.

#### ART. 2.—*Treatment of Cholera in the Stage of Collapse.*

(*Lancet*, Dec. 18, 1848.)

I. By Dr. OGIER WARD.—The author states it as his opinion that cholera is the prolonged cold stage of a peculiar form of fever, which, if very intense, destroys the patient at once; but in other cases induces a gradually increasing congestion of the interior venous system, which relieves itself by the effusion of serous fluid into the stomach and bowels. For this state he mentions that much may still be done for the relief of the patient. The most approved external remedies were, external heat, cold affusion, and counter-irritants. The author attempts to account for the favourable opinion of the application of cold in Persia, and of heat in Russia and the rest of the northern countries, partly by the concordance of such ideas with the ordinary feelings of the inhabitants of such different climates; and partly by the notion that in Persia, where the thermometer is above 98° in the sun, the patients, exhausted of their fluids by the disease, would be dried up and mummified by any attempt to keep up the temperature of the body by exposure to the sun's heat; whereas in Russia, &c., it was supposed, and probably with truth, that as cold is a direct sedative, its opposite, heat, was necessary to restore the vital powers. All the reports concur in the efficacy of cold affusion in inducing reaction; and its success appears to have been in proportion to the violence of the shock. Counter-irritants were successful only in connection with other remedies; but they deserve attention from their stimulating power, and their readiness of application. Blood-letting was useful in every stage in relieving the congestion and rousing the heart, by removing the load that oppressed it. In the state of complete collapse, salt and mustard emetics, to excite the system, followed by bleeding, was a favourable mode of treatment. The internal remedies most to be relied on in the stage of collapse may be classed under the heads of revulsives, stimulants, and specifics. The first class, besides emetics of salt and mustard, comprised tartar emetic and croton oil, and calomel in large doses. The effect of each was to check the vomiting and purging; but the last three were remarkable

for their power of restoring the flow of bile, of a dark green colour, when tartaric acid of antimony and croton oil had been used, and like blue ointment, when the calomel had been given. The action of all three is supposed by the author to be irritating to the mucous membrane of the stomach and bowels, of which it stops the secretion by changing the action of the part. The blood thus diverted from the membrane returns without loss into the portal system, and by the secretion of fresh bile, previously pent up in the gall-bladder, is expelled, the spasm of the duct having been relaxed by the irritation of its orifice, produced by the tartrate of antimony, calomel, or croton oil. The blue colour of the bile when calomel was used may, perhaps, be explained by the decomposition of the salt by the alkali of the bile. From the number of returns in its favour, besides the extensive experience of the author in its use, he is disposed to place most reliance on the croton oil, as its action is simply irritant (many of the patients complaining that it made their throats sore when given in solution or suspension); whereas the tartaric emetic is a direct sedative, and hence may be dangerous; and the author had given calomel most extensively in large doses, without ever having seen such effects produced as those which he has mentioned above from the reports of others. Stimulants, after a fair trial, were almost universally condemned; and it is remarkable that M. Magendie had more success with his punch than any other of the Parisian physicians. His great rival, Broussais, was so unsuccessful that he entirely relinquished his care of cholera patients at Val de Grâce. Opium, either in small doses, as a stimulant, or in large ones, as a sedative, was equally unfit to be relied upon. The last class, specifics, comprises calomel, with or without opium, cold water, salines, and quinine, although the author never met with a single case of real cholera in which he could trace the recovery of the patient to the influence of calomel, nor ever observed that it produced any specific effect whatever; still, from the almost unanimous approval it has met with, and his own experience of its benefit in English cholera, he would strongly recommend it in future experiments, as being, at the least, perfectly harmless, though taken in enormous doses. He would also adopt the use of cold water *ad libitum*, upon the faith of the reports in its favour, though his own experience is decidedly opposed to it. Salines, on the other hand, when well diluted, have, besides a number of most favourable reports of their efficacy, this hypothesis in their support, viz. that they restore to the blood, by their endosmosis through the coats of the vessels, if not by their being absorbed directly into the circulation, the saline matter removed by the serous evacuations; whereas the water, if it be not rejected by vomiting, as in the author's experience, could scarcely be absorbed, the tendency of the venous system being to empty itself: nor, if it were absorbed, could it supply to the blood those saline elements of which it had been deprived. In the author's experience, the best mode, though a painful one, of arresting vomiting in all cases, is to keep the stomach empty, when, after a time, it will cease to suffer the action of vomiting, whatever that may be. From an attack of English cholera he suffered, and thus cured, the last efforts of which produced only bloody mucus, as well as from other similar results after emetics—the author believes that the stomach contracts itself during vomiting. Quinine, viewed in reference to the hypothesis of the intermittent nature of cholera, seems worthy of further trial than it has yet experienced. In conclusion, the treatment recommended by the author in the stage of collapse would be the following, and much in the same order as the remedies are stated: cold affusions; hot air; external counter-irritation, and frictions; venesection; mustard and salt emetics; cold water *ad libitum*, or Dr. Stevens' salines; calomel and tartaric acid of antimony, alternately, in large doses; and, if all failed, croton oil.

II. By Dr. KING.—Dr. King, who had the charge of a large district, during the prevalence of cholera, first employed Stevens' plan of salines, with small doses of calomel and opium; but almost all the cases were fatal. He then pursued a stimulating plan, with a similar result. He ultimately adopted the system recommended and practised by Mr. French. He placed a pail of cold water by the bedside of each patient, and allowed them to drink *ad libitum*; when the patient began to vomit, he considered, as a general rule, that he would do well. He should mention that, in addition to the water, he gave large doses of calomel,



which might have had a share in producing the result. Those who recovered were all more or less affected with the calomel. When hiccups came on, he considered the patient out of danger. He found bile in the evacuations after this treatment, the fæces being of the colour of the blue mercurial ointment. He did not think the heart the chief seat of the disease. All pregnant women died. He spoke of the necessity of perfect repose in the treatment of the disease, and stated his belief that many patients had died on removal to the hospital. More success attended those who were treated at their own homes. Croton oil, according to his experience, was not of service. Hot air applications did harm; cold air was preferable. Brandy and all stimulants were injurious.

ART. 3.—*Capsicum Embrocation in Cholera*.—[Dr. Turnbull recommends the above in the following words:]—My plan of treatment consists in endeavouring, by means which can be repeatedly applied without excoriation of the skin, to re-excite an action of heat on the surface of the body, and thereby to restore the lost balance of circulation and nervous energy. For this purpose I employ an extract made of capsicum, with alcohol, reduced to the consistency of jelly. Three drachms of the extract to be well mixed with six drachms of purified lard; the patient to be well rubbed over the abdomen, heart, and calves of the legs, several times a day: and at all times, if there be any coldness over the surface of the body, or when spasm takes place in the abdomen or calves of the legs. The rubbing ought to be continued until such time as the patient expresses that the heat is intolerable. Another form of the employment of capsicum is the following embrocation:—Concentrated tincture of capsicum: viz. capsicum pods, four ounces; rectified spirit, twelve ounces; macerate for a week, and strain. To increase its energy upon the nervous system, when required, I add two or four grains of delphinia, or veratria, to the tincture. Another method of obtaining the advantages of capsicum, speedily, and without much expense—and which may be considered a household recipe for cholera, until medical assistance can be obtained—is to boil four ounces of capsicum in a pint of olive oil, for six hours, and strain. To free the capsicum from the chloride of sodium with which it is generally united, it is necessary to add water, and strain, previously to mixing it with the oil, otherwise it will produce vesication. The chloride of sodium is the chief, if not the only, material whereby vesication is produced when capsicum is used externally.

*Lancet*, Jan. 29, 1848.

ART. 4.—*Laryngotomy in Typhus Fever*.—Dr. Frey directs attention to the frequent occurrence in typhus fever of lesions of the larynx, threatening fatal obstruction to the glottis. The principal of these are simple mucous inflammation, fibrinous exudation, deposition of typhus matter with its sequelæ, viz. abscess, ulceration, and sloughing of the parts in the neighbourhood of the glottis. He observes that the degree of lividity of the surface is a false measure of the amount of danger, as in typhus the anemic condition of the patient prevents the development of this condition. He is not deterred from operating in cases where any degree of vital power remains, by the fear of hemorrhage or of subsequent supuration, having seen many instances of recovery in circumstances apparently very unfavourable. In one case, however, he has seen the operation unsuccessful indirectly on account of hemorrhage. In this case, the venous oozing having been uncontrolled by the application of ice, the physicians were induced to have the wound closed, on which suffocation soon afterwards recurred. The hemorrhage is, in this case, ascribed by the author to the abnormal condition of the blood.

[Upon this the Editor of the "Monthly Journal" remarks:]

We have had frequent opportunities, in the Edinburgh Royal Infirmary, of observing patients saved from impending suffocation, in the progress of decline of typhus fever, by the timely performance of tracheotomy, which operation is always preferred to laryngotomy there, excepting when the suddenness of the seizure renders a second or two of the utmost importance. A considerable number of the cures have been permanent, and, where death has untimely occurred, it has generally been from secondary consequences, such as the occurrence of pneumonia or pleurisy, or from the natural progress of the fever, rather than from

any circumstances connected with the operation. Hemorrhage has not generally been found to occur to any very considerable extent, and has only been dangerous when the opening into the trachea has been made too wide for the tube, so as to permit of the flow of blood into the respiratory passages. When the deep part of the wound is of limited extent, and the tube is grasped tightly by the opening in the trachea, there is generally no hemorrhage, in consequence of the direct compression of the vessels by the tube. On the whole, the result of experience in Edinburgh seems to show, that deaths occur in typhus much more frequently from the delay than the timely performance of an operation not in itself very serious.

[We do not call in question the accuracy of the above remarks, suggestive of the frequent occurrence of laryngeal complications in fever in Edinburgh, but they are certainly (such at least as would require laryngotomy) far from common elsewhere.]

*Zeitschr. für Rat. Med., and Month. Journ., April 1848.*

ART. 5.—*Application of Chloroform in Typhus Fever.*—An interesting case of the successful application of chloroform has just occurred in the Bristol General Hospital. The patient, a female about eighteen years of age, exhibited all the symptoms of a bad case of typhus fever. The usual remedies were tried for a fortnight without any beneficial effect. The unfavourable symptoms continuing, the patient being delirious, and the system, in fact, worn out for want of sleep, her life was despaired of. It occurred to the physician, under whose care the patient was placed (Dr. Fairbrother), that chloroform being used in operations to produce a sedative effect, if the patient could be kept influenced by it continuously, it would reduce the too rapid circulation of the blood through the lungs, relieve the difficulty of breathing, and thus become efficacious in subduing the excited state of the brain and system, in such cases, or in others of an inflammatory nature. He accordingly tried the experiment, commencing with ten minims, administered in a cup-shaped sponge, inclosing the mouth and nostrils, but occasionally admitting atmospheric air. About ten minutes were occupied in the inhalation. The soporific state was induced in a few seconds, and continued for about half an hour. In about four hours the chloroform was again administered, the quantity being somewhat increased, and the inhalation was now continued for half an hour. The patient slept from this time (twelve) to four o'clock. She took a little porter, and again slept till eight o'clock. The application was then repeated, and was continued for several days, the quantity of chloroform being gradually increased to twenty-five minims, and the time of inhalation to forty minutes, guided in these particulars by the state of the pulse.

No other medical treatment was adopted; the only other means used being the sponging of the body with tepid water, and applying cold pads to the head, the system being supported by beef-tea, porter, wine, &c., and, to allay thirst, toast-and-water. The patient recovered; the pulse was reduced from 130 to between 70 and 80; the tongue became clean and moist; the skin cool; diarrhœa ceased; the appetite returned, and the countenance regained its natural aspect.

It is a recommendation of this remedy, that so far from its being disagreeable, the patient, after it had been administered a few times, has craved for it.

*Lancet*, Jan. 29, 1848.

## SECT. II.—DISEASES OF THE NERVOUS SYSTEM.

ART. 6.—*Extracts from Andral's Lectures on General Pathology. Semeiotics of the Nervous System.*

(*Medical Times*, p. 355.)

The cerebro-spinal functions may be modified by disease, and we have here to study the alterations of intelligence, of motion, or of sensation.

The intellect may be disturbed in maladies of the cerebral substance or of its envelopes, but not necessarily in all diseases of the cerebral pulp. Observation

teaches us that the intellectual powers are chiefly modified when the cerebral surface is the seat of the disorder—a fact illustrated by almost every case of cerebral hemorrhage or softening. The intellect may be merely weakened slightly, or so much prostrated as to leave the subject in a state of complete indifference to all surrounding objects; or the mind may be disturbed, as in delirium, the co-ordinating link of the ideas being broken by disease. In cerebral hemorrhage we seldom meet with delirium at first, but it is not unfrequent after a few days, when local reaction has occurred. In ramollissement, particularly of the surface, delirium is a more frequent sign. Simple congestion of the brain often produces delirium, and, if the pressure on the cerebral substance be much increased, coma supervenes. We have also occasionally observed intermittent aberrations of intellect due to the presence of accidental productions in the cerebrum. Acute meningitis usually sets in with headache and vomiting, symptoms which are soon followed by a form of delirium remarkable from the agitation which accompanies it; after some time coma replaces delirium. In chronic meningitis, disorder of the intellect is noticed, and some cases of insanity present after death the characteristic anatomical appearances of chronic inflammation of the cerebral envelopes. The delirium of meningitis can be explained either by the propagation of inflammation from the membranes to the brain, or by sympathy of the cerebrum with the affection of its envelopes. When tubercles have formed in the pia mater, delirium often shows itself long before the symptoms of meningitis are manifest. We cannot refuse to admit the existence of one form of delirium, unconnected with any appreciable anatomical change, and resulting from the protracted excitement of intellectual labour, or the preoccupation of absorbing passions. It may also accompany many general disturbances of the system. Thus it arises from the debility produced by repeated hemorrhage, or chronic disease; also, during acute diseases, in subjects accustomed to the use of fermented liquors. The success of a narcotic or stimulant plan of treatment, and the complete failure of depletion in the latter case, prove that the delirium is not then due to inflammatory action. The prolonged influence of toxic agents, therefore, sometimes brings on delirium. We have mentioned fermented liquors: we may also add that the absorption of saturnine preparations has the same effect. This poison produces at first a vague and badly defined form of mental aberration, which soon becomes permanent and complicated by convulsive and epileptiform symptoms. Simple feverishness, in nervous subjects, or in those whose brain is kept in a constant state of activity, will often occasion delirium. Violent pain may also cause it. Some organs seem also to have the privilege of being in their diseases accompanied by this symptom. The womb is one of those. In some instances of painful and difficult menstruation the patients are delirious at each period. Others become partially insane at the beginning of pregnancy; and puerperal mania has been met with frequently by all those who have devoted much attention to the practice of midwifery.

Alterations of motion may be the signs of various affections of the nervous system. We will, in the first place, consider these alterations according to their seat, and afterwards we will study them with regard to their nature.

From the seat of modified motility we may sometimes detect the seat of the disease in the nervous centres; for instance, alteration of motion in both limbs of one side points, in the first place, to disease of the cerebrum, and in the second, to disease of the side of the brain corresponding to that side of the body in which motion has not been altered. This observation not only applies to the cerebrum, but also to the cerebellum, but does not hold good for the pons varolii. It might, it is true, be said that in some forms of meningitis, fluid pressing more upon one side of the brain than upon the other—in tumours occupying the membranes, or in meningeal hemorrhage—the same crossed effects of paralysis will be observed; but these cases are extremely rare: they constitute exceptions, and do not annul the diagnostic rule above established. It has been asserted that pressure of the hemispheres downwards was more prone to occasion paralysis than lateral pressure, and hence that the seat of meningeal hemorrhage or effusion might occasionally be surmised, but the fact itself should not be admitted until further demonstration. In reading attentively the authors who have treated of these subjects, from Valsalva and Morgagni, down to our own contemporaries, perhaps twenty cases



might be collected in which paralysis was found to exist on the same side as the anatomical change within the brain. Of these twenty cases, the greatest number are not sufficiently detailed to be conclusive; but some five or six must be accepted. Morgagni relates one, in which he took every precaution to avoid error. In the "Archives" of July, 1846, M. Bouillon Lagrange published another, accompanied by every detail, and which seems perfectly authenticated. M. Blandin observed one case of the same description, in which the disease occupied the posterior lobules of the brain; and he explained the presence of paralysis on the same side by the anatomical fact mentioned by Gall, viz., that the fibres which run from the medulla oblongata to the posterior cerebral lobules, do not decussate. This remark accounts, it is true, for cases like that of Professor Blandin, but leaves unexplained those in which the alteration occupied the anterior parts of the hemispheres. One limb only may be paralysed from cerebral disease, and the signification of this modification of motion is the same as when the two limbs of one side are affected. It has been often asserted that, when the arm was paralysed, disease of the optic thalami might be inferred, and alterations of the corpus striatum when the motion of the leg was modified. Some facts have been adduced in support of this theory, but a greater number militate against it. When the spinal cord is diseased, alteration of motion in the limbs shows itself in a different manner, both limbs, inferior or superior, being usually affected at or about the same time. In spinal affections the paralysis does not in general take place suddenly: when the four limbs are successively or simultaneously deprived of motion, we are compelled to admit the presence of anatomical change in both hemispheres, in the pons varolii or in the spinal cord. Alteration of the movements of the face indicates disease of the brain, or pressure upon the portio dura; when due to cerebral disorder, it takes place on the same side as paralysis of the limbs. But when the leg and arm of one side are deprived of motion, and when the face is paralyzed on the opposite side, a double cause to these symptoms must be admitted to exist. Alteration of movement in the tongue is caused by disease of the brain; also in the eye: squinting, for instance, is often one of the symptoms of meningitis. Paralysis of the rectum and bladder is more frequent in maladies of the spine than in those of the brain, and usually follows loss of motion in the inferior extremities. It is also, in most cases, disease of the spine which occasions paralysis of the œsophagian, pharyngeal, or respiratory muscles. In apoplexy, however, pulmonary congestion and stertorous breathing are frequently observed. The muscular parietes of the abdomen are not uncommonly struck in diseases of the spine, and, at their incipient stage, by semi-paralysis or spasmodic contraction.

We now turn to the study of the alterations of motion, considered as to their nature. Motility may be diminished or abolished, and it may be perverted; hence two great divisions, which we will successively examine.

When motion is diminished, incomplete paralysis is said to exist; the paralysis is complete when movements are altogether abolished—two conditions which may indicate disease of the nervous centres, of the nerves themselves, or of muscular structures.

In the first place, paralysis may be present without any appreciable anatomical alteration of the nervous centres: when lesions are detected, their nature is often pointed out by the mode of production of the paralysis. Thus, when loss of motion has taken place suddenly, and at once attains its highest degree, hemorrhage has most probably occurred in some portion of the nervous centres: if the hemorrhage or apoplexy be slight, the paralysis is not complete; the contrary occurs if the local damage is considerable. When paralysis increases, even very rapidly, after the first instant of its production, its cause is not to be sought for in hemorrhage, but in encephalitis, followed by rapid ramollissement. Another sign distinguishes the paralysis due to softening from that produced by hemorrhage: it is contraction in the paralysed parts—a symptom which may precede the loss of motion in ramollissement, but is never observed immediately after an apoplectic stroke; when it occurs in cerebral hemorrhage, it is only several days after the seizure, where local reaction takes place within the brain. Paralysis which comes on in very slow and gradual stages is due to chronic softening of the cerebrum, and may also be occasioned by the presence of tumours or morbid productions within the skull, pressure being thus produced upon the cerebrum.

In these various cases paralysis is partial. But diminution of motility has, in one instance, a tendency to become general: observation teaches us that this general paralysis, which begins by difficulty of the movements of the tongue, chiefly observable in the articulation of words, which soon produces inability to raise the feet from the ground, afterwards impedes the motion of the arms, and finally attacks the rectum and bladder, is usually preceded or followed by loss of memory, and more or less derangement of the mental powers; it is very often met with in the insane, and was for a long time considered as belonging exclusively to the history of insanity; but more rigorous researches have clearly shown that it may be quite independent of any alteration of the mind. Authors do not agree upon the nature of the anatomical lesion by which it is caused, and, from the results of our own experience, we are inclined to refer it in general to alteration of the cerebral envelopes, principally to serous suffusion beneath the arachnoid, within the ventricles, and at the basis of the brain. The cortical substance, and even sometimes the medullary texture of the cerebrum, may also be indurated or softened. We believe that, when the cortical substance has been in the first place affected, the symptoms begin by disturbance of the intellect; and that, when the meninges and the basis of the brain have been the primary seat of disease, its first signs are alterations of motility; but we cannot do better than refer you for further information to M. Calmeil's excellent work on the subject. In some cases of introduction of toxic substances into the system, no alteration whatever is found on dissection, and yet paralysis has been present; for instance, persons who have suffered much from saturnine intoxication are subject to delirium and epileptic convulsions, which cannot permit us to doubt that the brain has undergone some modification. These subjects often become paralysed, the extensor muscles of the hands and fingers losing their power of contraction, great pain sometimes existing at the same time in the affected extremities. Again, in hysteria, local paralysis, most fickle in its characters and duration, shows itself frequently. And, as a third instance, we may mention *pellagra*, a disease recently described, which begins by an eruption on the skin, and leads to paraplegia. In this disease, attributed by Dr. Rousselle to the use of bad Indian corn, no alteration in the spinal cord has ever yet been detected, nor has any been discovered in the brain of paralysed subjects who had suffered from hysteria or from saturnine intoxication.

Some forms of paralysis are certainly due to local alterations of the nerves. Thus paralysis of the deltoid muscle is frequently the result of pressure upon the circumflex nerve: and paralysis of the face often results from disease of the portio dura. In this latter malady, which sometimes may be produced by a draught of cold air upon one side of the face, the aspect of the countenance is particularly striking: the wrinkles of the forehead on the affected side are effaced; the eye remains open, and the conjunctiva becomes inflamed in all cases, from uninterrupted contact with the air; the mouth is dragged towards the healthy side; the tongue is not deviated. When paralysis of the face is due to cerebral disease, and not to an affection of the nerves, the limbs are usually paralysed also; the tongue is deviated, and we cannot assign a reason for the fact, but the eyelids retain their power of motion. Paralysis may, as we have stated, be the result of a disease of the muscles. This is observed sometimes after rheumatic pains of very great duration, or when a muscle has been kept for a long time in a state of complete immobility: the muscular tissue becomes atrophied, and may for ever lose the power of contracting.

Muscular action may not only be abolished, it may also be perverted: convulsions are constituted by involuntary and violent alternations of contraction or relaxation of the muscles of the body, whether permanent or transitory.

*Convulsions* may be accompanied by loss of consciousness; they may exist alone, or be attended with other symptoms. We now consider them as solitary expressions of disease. In childhood they are observed as maladies, are brought on by trifling causes, and often leave no anatomical alterations in the organs; but in the adult they are symptomatic of various disorders, result from considerable general disturbance, and usually leave evident anatomical changes to account for their production. The predisposing causes of convulsions are numerous. Thus a great volume of the head, increased irritability of the nervous system, a fair complexion, disturbed sleep, previous ill health, are considered as such in infancy.

Also, acute diseases, great mental emotions, instinctive imitation, hereditary predisposition, said to be handed down from hysterical mothers to their children—possibly, emotions experienced during gestation—may influence the production of convulsions in the child. Diseases of the encephalon, meningitis, morbid productions within the brain, acute encephalitis, must be taken into account, particularly in childhood. The causes of convulsions should be sought for elsewhere: various disturbances occasioned by the evolution of the teeth, gastro-intestinal inflammation, the debility which follows chronic enteritis, foreign bodies in the intestines, e. g., retention of fecal matter, worms, &c., may also produce them. Feverishness alone does not cause convulsions in the adult, but is frequently their origin in the child: one form of pernicious intermittent fever is marked by their presence; a plethoric state, and also, perhaps more frequently in the adult, anemia, excessive hemorrhage—for instance, after parturition—syncope, must all be ranked amongst the causes of the symptom which now engages our attention. Some poisons, such as saturnine emanations, also occasion them; ergotism not only occasions gangrene and inflammation of the gastro-intestinal tube, but sometimes also a convulsive form of disease, which the progress of public hygiene now-a-days renders more rare. Convulsions have followed transfusion of blood, and are said to result in some children from the peculiar qualities of the milk of their nurses (Brachet and Sumner). Excessively abundant secretions, too rapid growth, irritation of the skin, such as that produced by pins incautiously placed in the swaddling clothes of infants, the influence of cold, are counted amongst the predisposing causes of convulsion. This symptom ranks amongst the most serious which may appear during the first stage of eruptive fevers, and is still more important when it follows the disappearance of the eruption, usually denoting at that period internal inflammation. With regard to the organs of generation, we find many of their diseases amongst the causes of convulsions; for instance, dysmenorrhœa, the difficult establishment of the menstrual functions, the accidental suppression of the catamenia; in hysteria they are frequent; onanism may bring them on, and they are occasionally met with during pregnancy and after parturition.

Motion may be perverted in a different manner; morbid muscular contractions may be permanent, as in tetanus. In this disease we cannot possibly admit the constant existence of alterations in the nervous centres, although they coincide sometimes with the malady. In some climates, wounds of the skin frequently cause tetanus, and a congested state of the nerves and neurilemma in the vicinity of the wound, is certainly not a constant appearance. The spinal cord, also, has been found diseased: but the tetanus in such cases was the result, not the cause, of the alteration. Some muscles may be affected with permanent contraction; hence a change of form, or of position, of the part may arise. Muscular contraction may also be a sign of cerebral or spinal softening, but never of mere hemorrhage. In hysteria, it is not uncommon to notice a partial contraction in various parts of the body: it appears and ceases suddenly, or returns without any apparent cause, imitating shortening of a limb, or spinal deformity, and exists only in certain positions. The contracted parts may be swollen and painful. We have seen this symptom last as long as eight months: we have never noticed it in the male sex, nor in women over forty or under twelve years of age. Another form of convulsion which you are well acquainted with is hicough.

*Pain.* We now come to the consideration of another sign of the maladies of the nervous system, viz., pain. Pain varies in intensity, in nature, and in seat. Let us examine it under these three aspects. With regard to its intensity, we find that the nature of diseased tissues exercises a considerable influence. Compare, in this respect, the pain of inflammation in serous or in mucous membranes. The peculiar form of disease also modifies the violence of pain. Inflammation is usually accompanied with great suffering, particularly when any constriction exists in the diseased part. Neurosis is often unattended with pain; neuralgia, on the contrary, is always very painful. In acute diseases, more pain exists than in chronic affections; in advanced age, and in the male sex, less suffering is usually complained of during the course of maladies than in youth and in women. Weak subjects and nervous temperaments are peculiarly subject to pain; and in this respect idiosyncrasy creates a considerable difference between individuals. With regard to the nature of pain, it is sometimes comparable to a sense of weight; in



other cases it is attended with throbbing, as in some inflammations, and also in hypochondriasis and hysteria. Lancing pains are usually referred to cancer, although they seldom accompany visceral cancer. Pain varies in its seat. It may occupy an organ or a nerve. In neuralgia, for instance, the entire course of a nerve is the seat of a constant and dull sensation of numbness, whilst some peculiar spots are the nuclei from which radiate, from time to time, violent lancinating pains. In sciatica, patients often complain of a distressing sensation of cold about the foot and leg; and in such cases, the application of the thermometer has demonstrated to us the positive diminution of the temperature of the limb. Pains may be fixed or movable, continuous or with paroxysms; they may be intermittent, or occur only at night, as it frequently, but not exclusively, happens in syphilis.

Pain must now be examined in the various regions of the body as a sign and a symptom of their diseases. In the head, pain may occupy the cranium or the face. Pain of the cranium may be general or partial, being limited to the frontal, temporal, or occipital regions. Headache may be indicative of disease of the skull or brain, or be symptomatic of maladies seated elsewhere. Pain may be observed on pressure of the scalp in many cases. In the same region a neuralgia is noticed, as in hemicrania and clavus hystericus. The cervico-occipital region is frequently occupied by neuralgia. The dull, permanent pain in this neuralgia chiefly exists in three points, viz. at the point of emergence of the occipital nerve, below the mastoid process; in the space which separates the anterior edge of the trapezius muscle, and the posterior margin of the sterno-cleido-mastoid; and on the parietal prominence. The entire lobe of the ear is sometimes painful, and the suffering may spread to the eye, face, and meatus auditorius externus; it has been even propagated to the shoulder and arm. Headache may point to disease of the bones of the skull; in acute meningitis intense headache is one of the earliest symptoms. When tubercular deposits exist in the membranes, pain is complained of long before any other symptoms; during the progress of acute inflammation infants manifest their suffering by a special cry, and by raising their hand towards the painful region. Congestion of the brain and hemorrhage are not usually attended with pain: in softening, pain is usually observed in the neighbourhood of the diseased part of the cerebrum. Headache may, we have said, be produced by maladies which do not primarily affect the head. Thus in feverishness, particularly in that which attends pyrexia, it is almost constant. Thus, in the incipient stage of small-pox and of typhoid fever, headache is one of the most prominent symptoms. Disturbances, even slight, of the gastric functions cause headache. Pains of the face usually occupy the branches of the fifth pair, and seldom both sides together. The inferior maxillary branch with its divisions is that which is most subject to neuralgia.

Pains in the body may be observed in several regions; in the spine, for instance, whether caused by maladies of the envelopes, or of the substance of the medulla spinalis, spinal meningitis more frequently occasions suffering than myelitis. Pain on pressure, or motion, is also commonly met with on the sides of the spinous prominences, and sometimes, at the same time, is accompanied by suffering along the course of the spinal nerves in the neck, chest, or abdomen. This pain and spinal tenderness seem connected with neuralgia (Valleix). Dorso-intercostal neuralgia is more frequent on the left than on the right side, and is chiefly noticed in the fifth, seventh, eighth, and ninth intercostal spaces. Although a dull sense of numbness exists throughout the course of the affected nerves, the patients complain chiefly of one painful spot in the vicinity of the sternum, of another at the vertebral column, and of a third on the course of a line extending from the centre of the axilla to the crista ilii. In some subjects the pain spreads to the epigastrium, or extends to the arm, forearm, and fingers. Concomitant oppression and palpitations may induce the erroneous belief in a disease of the heart or lungs, which do, however, predispose to this form of neuralgia. Dr. Bassereau considers intercostal neuralgia as invariably connected with a morbid state of the uterus—an opinion which we do not by any means adopt. This disease is more frequent in women; it may last a long time, and baffle the skill of the medical practitioner. We are disposed to admit that angina pectoris and this dorso-intercostal neuralgia are one and the same malady. It may accompany

disease of the heart, or of the aorta; and, in general, we must say, that the name of angina pectoris has been imposed upon a great variety of very different affections. Muscular rheumatism is observed also in the thoracic walls. As to the pains which accompany internal thoracic disease, we have described them when treating of maladies of the respiratory organs, and those of the circulation.

The abdomen may be the seat of pains of various natures. The walls being of a muscular texture, are occasionally invaded by a very distressing sort of rheumatism. Phlegmonous inflammation of the parietes also occasions pain; and this symptom is often met with in incipient spinal disease. The pains of peritonitis and of enteritis have been already noticed in another place.

Pains of the extremities may be idiopathic, as in rheumatism, inflammation, disease of the bones, &c., or symptomatic; the latter only claim at present our attention. At the beginning of acute disease, chiefly of fever, the limbs are the seat of a painful sensation compared to severe contusion. These pains were known to Hippocrates, who says, "*Spontaneæ lassitudines morbos annunciant.*" The same is observed frequently in hypochondriasis and hysteria, and also in general disturbances occasioned by alterations of the blood, plethora, scurvy, saturnine intoxication, &c. Softening of the brain and disease of the spinal cord frequently cause them. In diseases of the digestive tube pains are often noticed in the limbs, and also cramps. They are often induced, for instance, by "*embarras gastrique*," by diarrhœa, and their existence is usually denoted in Asiatic cholera. It is not so in diseases of the respiratory organs, but they are frequent in maladies of the circulation. In gangrene of the extremities, connected with vascular obstruction, patients complain, in general, of very violent pain in the limbs.

ART. 7.—*On certain Forms of Headache.* By DR. MURPHY.

(Reported in *Medical Gazette*, Dec. 10, 1847.)

[In an essay read before the South London Medical Society, the author described the following varieties of headache: 1st, Periosteal headache; 2d, Rheumatic headache; 3d, Nervous headache; 4th, Anæmic headache; 5th, Congestive headache.]

1. Periostitis of the cranium is seldom met with unless after a mercurial course, in a scrofulous constitution, and is generally found to invade either the coronal or parietal bones. The diagnosis of headache arising from this cause, although not difficult, has sometimes been erroneous. The pain is severe, and confined to one or more of the localities above mentioned; it is increased at night in bed, by stimulating drinks, and by pressure. A raised surface can be detected at the site of the pain, and on inquiry it will be found that more than one course of mercury has been given. The treatment should consist in the application of the emplastr. hydrargyri spread on thick leather, and the exhibition of the iodide of potassium with morphia and tincture of digitalis.

2. Another form of headache is the rheumatic or fibrous, which is located in the tendon of the occipito-frontalis, the temporal aponeurosis, and tendinous insertions of the muscles at the back of the head. It is usually preceded by rheumatism of other parts, and is increased by muscular movements. Warm coverings, when they can be applied, usually relieve it, also sinapisms: and, if the pain is very severe, leeches and cupping, and a few doses of calomel with opium, seldom fail to give relief. Gout may also attack the same parts, but may be diagnosed by our previous acquaintance with the habits of our patient. In both cases the pain is intermitting, changes its locality, and is felt to be external, and the health is not affected.

3. The next form belongs to the class of spinal irritation, is very frequent, and met with exclusively in females during the menstrual periods, and attacks mostly the left side of the head; the pain is intermittent, shooting, and lancinating: may be fixed for days, and is most severe at the temple (when it is termed *clavus hystericus*), and next at the parietal protuberance and occiput; it proceeds from the sub-occipital nerve, and, if the exit of the nerve is pressed upon, pain, more or less severe, is complained of, extending along the whole course, or at certain sites only of the nerve—as at the temple, nape of the neck, parietal protuberance, &c.; it is usually increased during the menstrual period, and is generally a

complaint of unmarried females, between the 23d and 35th years of life, and is indubitably a form of hysteria. The menses are usually profuse or difficult, the bladder irritable, and there are ill-defined, painful sensations about the pelvis; and three forms of neuralgia coexist. The irritation of the sub-occipital nerve must be traced to the ovaries, being only present where these exist, and while capable of fulfilling the function of menstruation; and our treatment must be primarily directed to remove any congestion, or irritation of these peculiar organs; and, secondarily, to lessen the pain of the nerves. The author advises the daily use of hip-baths, or sea-bathing, where possible; attention to prevent accumulation in the rectum; abstinence from stimulants; mental employments; *inf. valerian c. digitalis*, with pills of *assafoetida*; occasionally, general or only local bleeding; and when these fail, a gentle mercurial action, the cold bath being during the time omitted. As local means, he recommends belladonna plasters, veratrine ointment, sinapisms, or blistering. When, however, the patient is exhausted by leucorrhœa or profuse menstruation, with symptoms of chronic inflammation of the womb or ovaries, the treatment becomes more doubtful; but the author prefers the trial of a tonic treatment, and advises the exhibition of the valerianate of zinc and quinine as especially efficacious, and the sulphate of iron in infusion of valerian when there are evidences of confirmed chlorosis. This headache may be termed the *nervous* headache: it also assumes another form, which may be termed the *cutaneous* headache, and is the hemicrania of our forefathers: it seems to be located in the integuments of one half—usually the left side—of the head, which is so exquisitely sensible as scarcely to bear the least touch of the finger, and the pain never passes the mesial line.

4. Another form of headache is that arising from deficiency of blood within the cranium, and coming on after hemorrhages, exhausting discharges, or any other debilitating causes: the best examples arise in chlorosis. It is increased by the erect, diminished by the recumbent posture; is not a very painful form, but is often attended with impaired vision: its cause may be traced to diminished muscular power of the heart, which palpitates on slight exertion; there are also dyspnoea, pale face, and other symptoms of a feeble circulation, with a sinking pain at the epigastrium, and craving appetite. If the true cause of this headache be mistaken, and depletion used, paralysis has been known to supervene; but if the debility be removed, the muscular power of the heart is easily increased, and the most useful remedies are, steel by itself or combined with quinine, full diet, and the recumbent posture.

5. The last form of headache alluded to by the author arises from excess of blood, and may exist as a passive or congested, or as an active or inflammatory state. The former, arising from various known causes of congestion, is diagnosed by the constant heavy pain at the anterior part of the head, increased by the recumbent posture, sense of chilliness, slow, feeble pulse, tendency to vomiting, and pain in the lumbar region, caused by congestion of the spinal cord. It is a dangerous form of headache, and has, in the depressing diseases, proved fatal in a few hours; but in other cases has lasted weeks without much mischief. The treatment should be to induce reaction as soon as possible by the warm bath or an emetic. If the headache persists with hot skin, leeches to the inner nares will be found of value; applied to the temple, they debilitate without relieving the pain in the head, and they are altogether inadmissible when this co-exists with typhus or scarlatina. Blisters may also be applied, and diaphoresis produced by the usual means; cold applications to the head the author considered useless, and even likely to increase the congestion. Care is also requisite that mere congestion should not, by the use of stimuli, be forced into inflammation, which is the next stage, if resolution or fatal termination does not take place. The author regards idiopathic phrenitis as a most rare disease, and hydrocephalus acutus as congestion, not inflammation. Phrenitis is well marked by the tensive pain increased on stooping, by the bright eye, hot skin, nausea and vomiting, tendency to delirium, and occasional twitching of the muscles of the face; the most active antiphlogistic measures should be used.

There were other forms of headache easy of diagnosis, but of these the author would only mention the constant pain of the head in children, with emaciation and want of sleep, and which diagnosed tubercles of the brain. In the headaches



of pregnant females, referred to the centre of the head, and attended with a remarkably small pulse, and in which, if bleeding is neglected, convulsions, abortion, and too often death, are apt to supervene; and, lastly, the pain of the head occurring after a night's debauch, the cause of which, whether in the stomach or affected organ, the author considered not to have been sufficiently investigated.

ART. 8.—*Headache caused by Inflammation of the Frontal Sinuses.*—M. Mombert was accidentally led to the appreciation of this cause of headache by the observation of a friend who was attacked with violent frontal headache, which lasted the whole day and departed towards night, again to recur with equal severity in the morning. Several physicians had prescribed for the patient without advantage. One morning, in the excess of his pain, he rubbed his forehead so violently with a clothes-brush that he completely took the skin off, leaving a sore, which remained for some time. From this period the headache entirely subsided. Instructed by this case, M. Mombert treated a patient labouring under similar symptoms by applying a blister over the frontal sinuses; the result was equally fortunate.

M. Mombert believes that this form of headache arises from catarrhal inflammation of the frontal sinuses, and thus the affection may be readily cured by counter-irritation, applied as in the above-mentioned instance.

*Viertel Jahreschrift für die Pratisch. Heilkunde, and Prov. Journ., April 5.*

ART. 9.—*Treatment of Apoplexy.* By Mr. SOLLY.—In the treatment of apoplexy, the first thing to determine is not so much whether the effusion is serous or sanguineous, but whether it is of a sthenic or asthenic character; whether our patient will bear depletion, or whether the disease itself is the result of exhaustion. With regard to our diagnosis of the seat and nature of the effusion, this is more important in relation to our prognosis of this disease than our treatment. The author does not mean to undervalue careful diagnosis in these cases; on the contrary, he considers it of the greatest importance, and no pains can be too great which will assist us in coming to a right conclusion. In these cases the friends are, he observes, extremely anxious, and our prognosis, whether favourable or otherwise, must depend on the conclusions we arrive at regarding the cause, the seat, and the nature of the effusions. If the *cause* of the effusion be extreme plethora, and some accidental circumstance, such as posture, or straining at a stool, without any disease of heart or vessels, then our prognosis might be favourable. If the *seat* of the effusion appears to be at the base of the brain, but not near the medulla oblongata, then it may possibly be remediable. These are merely illustrations of the fact, that though our treatment may be the same where-soever the effusion may have occurred, and, in many instances, howsoever it may have been produced, our diagnosis ought yet to be made with the same care, and is of nearly the same value as if our treatment depended upon it.

Our resources, in all cases, are few and simple. First in the list stands blood-letting, the most valuable remedial agent in some cases, the most dangerous in others. Many a valuable life has been saved by the prompt and free use of the lancet—more have been hastened into eternity by its indiscriminate use.—(Pp. 536, 553.)

ART. 10.—*Treatment of Delirium Tremens without Opium.*—[Mr. Corfe states that he considers delirium tremens to be of hepatic origin, and that it is successfully treated by calomel purges. His words are:]—"It should be observed that every case of threatening delirium tremens is preceded by more or less biliary derangement; and, as these men rarely enjoy active or healthy secretions from their alimentary canal, it does appear, from the observation of a large number of cases in this hospital, that the disease is purely hepatic in its origin. This opinion is entertained by Dr. Seth Thompson, who has most successfully treated some of the worst cases of this disorder with large and repeated doses of calomel, followed by brisk cathartics; and he has never been obliged to resort to opium at all, sleep having succeeded the active unloading of the hepatic system. It has long since struck my mind that the invasion of the disease springs from a sudden, or, it may be, a gradual poisoning of the blood, by means of a chemical alteration in the

bile and urine; and that some of the elements of one or both of these secretions are carried through the circulation. My chief reasons for drawing these conclusions are the following:—Since I have had an opportunity of watching the admirable practice of the above-named physician, the disease has given way, in a most decided manner, under sharp purgation with calomel, &c.; and the improvement is invariably coexistent with the passage of numerous dark, offensive, and deeply-bilious evacuations. The onset of the disease is ushered in with loss of appetite, foul tongue, giddiness, nausea; and, in an effort to throw off some of the morbid cystic bile, sickness and bilious diarrhœa may probably set in also. Again, a very large number of cases, and those of the worst form, present themselves with symptoms of poison by urea. It is stated that they have had one or more fits; these fits are distinctly epileptic, and exactly resemble those attacks which sometimes occur in persons labouring under albuminous disease of the kidney, and in whom the disappearance of urea from the urine, and its presence in the circulating fluids, have been repeatedly detected by Dr. Christison and others. In fatal cases of delirium tremens an epileptic fit is often the forerunner of death.<sup>27</sup>

ART. 11.—*Ethereal Inhalation in Delirium Tremens.* By Dr. UPHAM, Boston.

(*Prov. Med. and Surg. Jour.*, Dec. 15.)

William Perry, an Irishman, 48 years of age, is of sanguine temperament, strong and robust frame, and has generally enjoyed firm health. He is an ostler by occupation, and has been a man of intemperate habits for many years. On Monday, July 12th, he was committed to the House of Correction, having for several days previously been drinking very freely, according to his own statement. On the same day he presented himself to the hospital as an out-patient, for treatment of chronic ulcer on the leg. At that time he showed no indications of delirium tremens, with the exception of slight tremors, manifested particularly about the hands. Towards evening he grew wild and uneasy; tremors increased, and became general. Slept but little during the night, and was found next morning in a state of high excitement, with tongue thickly coated, pupils dilated, lids tremulous, muscles universally agitated, pacing his cell, talking incessantly, and raving incoherently.

During the following twenty-four hours the patient showed all the usual symptoms of delirium tremens in a marked degree. He slept none, but walked the floor without intermission, talked disconnectedly, and, as is usual in like cases, busied himself in the performance of imaginary tasks. He was constantly pressing against the walls of his cell, or endeavouring, with the fancied assistance of horses, to remove the iron door. Meanwhile, if questioned, he would answer to the best of his ability, and obey directions with alacrity for the moment, but immediately relapse into his previous state of delirium. This, at times, assumed a violent form, so that it was deemed necessary to take away his bed, and all other moveable articles within his reach, and keep attendants by him day and night, to protect him from injury. For the succeeding forty-eight hours this state of things continued with but little variation, all the grave symptoms increasing in severity.

The usual treatment having failed, and large and repeated doses of morphia proving utterly powerless to produce sleep, the patient was found, on Friday morning, still in a state of wakefulness and high delirium, but so much exhausted as to make it a matter of the highest moment to induce sleep immediately. In this condition it was thought expedient, as a last resort, to make trial of ethereal inhalation; and the ether was accordingly administered by the sponge.

The patient was very refractory, and required to be held by assistants, in the meanwhile struggling, raving, and cursing. After inhaling the vapour for the space of ten or twelve minutes, he appeared quiet, and was thought to be fully under the ethereal influence; but upon the removal of the sponge he sprang up, and commenced raving anew. The process was repeated, and continued for ten minutes more; at the end of which time the patient was brought fairly under the desired influence, and fell asleep. From this state of artificial sleep he passed, without waking, into a quiet, deep, and untroubled slumber, which continued,

without intermission, for four hours and a half. He was seen several times during the continuance of this sleep, and within a few minutes after he awoke. He then appeared perfectly rational, called for cold water, and asked to have his leg dressed (he had bruised it badly during the delirium). In the course of half an hour he fell again, as was anticipated, into a quiet sleep, which continued, with few intermissions, during the afternoon and night. This morning (Saturday) he appears perfectly rational and well, though weak. Has no recollection of anything that has happened from nightfall on Monday to the time of his first waking on Friday afternoon.

ART. 12.—*Treatment of Chorea by Tartar Emetic.*—M. Salques, of Dijon, had recourse to tartar emetic, in a case of chorea of five years and a half standing, and which had resisted valerian, oxide of zinc, purgatives, cold baths, and narcotic frictions of the spine. For a week, thirty centigrammes were given daily, in a drink. The first dose produced strong vomiting, and an abundant diarrhœa; the others caused no apparent effect, with the exception of an anorexia, and the cessation of the chorea. The fourth day ten leeches were applied to the neck to diminish a slight cerebral congestion. A permanent cure followed.

[The same treatment has been found useful by Dr. Seth Thompson, as appears from the following extract. Mr. Corfe says:]

The oldest person whom he ever saw with this disease was recently a patient in this hospital, under Dr. Seth Thompson. She was a married woman, twenty-eight years of age, and had been frightened by a strange cat jumping on her back. The excitement of the nervous system was more alarming than he ever remembered to have witnessed in aggravated cases of this nature. But the violence of the symptoms rapidly subsided under the steady and repeated exhibition of tartar emetic, in large doses. Dr. Thompson commenced with half a grain every hour, for eight or ten successive doses, and then he continued it, in the same quantity, every four, and subsequently every six hours, when she obtained tranquil and refreshing sleep, and gradually improved under this treatment alone, and left the hospital perfectly well.

*Medical Times, Jan. 1.*

ART. 13.—*Tetanus successfully Treated by large Doses of Quinine.* By Dr. BISHOP.

(*New York Journal of Medicine, Sept. 1847.*)

[The following case is a marked instance of the sedative powers of quinine in large doses, and exhibits a line of treatment which merits a repetition.]

Dr. Bishop was called to see a blacksmith, who had run a rusty nail into the hollow of his foot, and found him (August 10) with the symptoms of confirmed tetanus, viz., opisthotonos, paroxysms occurring every three or four minutes, pain agonising, perspiration very profuse, difficult deglutition, pulse 84; can separate the jaws half an inch; respiration hurried. He incised the wound, and applied the actual cautery. Ordered: R. Calomel, Ext. col. comp., āā. gr. v; Ol. croton, m.j. ft. M.; a pill to be taken immediately. R. Sulph. quiniæ, gr. xv; Sulph. morph.  $\frac{3}{4}$  gr.; Syr. symp. q.s.; to be taken some two hours after the pills. To rub the following liniment along the whole length of the spine: Sulph. acid, 1oz., Ol. oliv. 2oz.

Morning. Evacuations had been copious, secretions very much depraved: quinine and morphine had the effect, in the course of a few hours, of lengthening the interval between the spasms to five minutes; pulse 75, pain much diminished, distress at the pit of the stomach quite severe, which might have been aggravated by quinine, as is sometimes the case. Has some desire for food; to take strong beef-tea, with brandy, during the day.

[Without going further into details, these medicines had a decided effect upon the disease from the beginning. The same treatment was continued for five days, with occasional variation as it regards time and doses, as circumstances seemed to require; kept up irritation to spine.]

Sixth day. Owing to a suspension of the quinine and morphine for ten hours, all the symptoms increased rapidly; they were again given in as large doses as at first, with the same happy effect. The wound healed rapidly; and on the



eleventh day the patient could open his mouth. On the twentieth day the spasms finally ceased.

ART. 14.—*Ether in Tetanus.*

By THOMAS HOPGOOD, Esq., M.R.C.S., Chipping-Norton.

About the middle of last November, a little boy, named John Stanley, nine years of age, had an incised wound on the knuckle of the index finger of the left hand, which had slightly injured the tendon of the extensor indicis. The wound was shown to me on the 20th, and it had then a very unhealthy appearance. The joint was much swollen, and a serous fluid was oozing from the cut. The directions I gave were not attended to, and I saw no more of the boy until the 27th; on that day I found that the wound had healed, but there was a great deal of irritative inflammation in its neighbourhood. The general symptoms were most alarming. He complained of a dragging pain at the pit of the stomach, and the impossibility of keeping his hand still. There was continual catching of the left upper extremity: slight twitchings of the muscles of the face; pain in the head, and loss of vision. The tongue was clean, skin rather hot, and the pulse nervous and accelerated. Deglutition was difficult, and the respiration oppressed.

I tried various local and general remedies, but at the end of four-and-twenty hours the little fellow's symptoms had increased in intensity, although some temporary relief had been afforded by the shock of cold water dashed over him. The muscles of the jaw and neck were now in a state of rigidity, and so were those of the upper and lower extremities. He shrieked out repeatedly from intense agony.

Under these circumstances I determined to try the effect of the vapour of ether, as a last resort. Having adjusted Startin's pneumatic inhaler, and found it to act properly, I poured three drachms of ether into the receiver. A slight cough was caused by the first inhalation, but in rather less than three minutes my little patient was fairly under its influence, and remained insensible for nearly a quarter of an hour. It was delightful to see the countenance of the boy change from that of anguish to one of tranquillity and ease. The spasmed muscles were completely relaxed, and from the time every symptom abated, he had occasional returns of the twitchings, but they were invariably removed by the inhalation. In a short time he perfectly recovered.

*Medical Times*, Jan. 15, 1848.

ART. 15.—*The Actual Cautey in Neuralgia.*—M. Notta adduces thirteen cases in illustration of the value of this form of counter-irritation. Of these, two were instances of intercostal neuralgia, ten of sciatica, one of facial neuralgia. Half the patients were robust, the remainder debilitated and impoverished. All were well-marked instances of neuralgia, that is to say, there were points painful on pressure, and darting pains along the course of the nerves; these pains were severe, and sleep was more or less disturbed in all the patients. Of the patients labouring under sciatica, six were quite unable to walk, and four only had received any benefit from previous treatment. In all these cases the cauterization was conducted as follows:—The patient being placed in a favourable position, was rendered insensible by etherization, and the affected part was crossed two, three, or more times with a thin iron, heated to whiteness, after which it was covered by compresses, dipped in cold water. The cautey produced brownish lines, which, the day after, became dry and crisp, and eventually desquamated. The subsequent pain was inconsiderable.

In respect to the effects of the cauterization, it may be stated, that the most remarkable was the notable relief of the neuralgic pain. In five or six hours the limb could be moved with facility, and the following night was tranquil; in the course of twenty-four or forty-eight hours the darting pains disappeared. Of the thirteen patients in whom it was tried, ten were perfectly cured, two were much relieved, and in one only was there no improvement.

*Union Médicale*, Oct. 1847.

ART. 16.—*Treatment of Facial Paralysis.*—Mr. Corfe, in speaking of the treatment of these cases, observes:—"But this only I am anxious to notice, that of all

the recent discoveries in the practice of medicine, the application of the *Lin. olei Tiglii* is a most efficacious remedy, applied with a camel's-hair brush along the course of the seventh nerve, as it emerges from the skull. The pustular eruption and irritation which it produces are rapid, evanescent, and readily controlled. The effect has been surprising in some instances, but at the same time, active purgation has been kept up by calomel and drastic purgatives. This treatment was first suggested to my mind by witnessing the astonishing influence of this counter-irritation, so admirably followed out in other diseases by our talented assistant-physician, Dr. R. G. Latham.

*Medical Times*, Oct. 22, 1847.

### SECT. III.—DISEASES OF THE RESPIRATORY SYSTEM.

ART. 17.—*Extracts from Professor Andral's Lectures.—Semeiotics of the Respiratory System.*

(*Medical Times*, Jan. 1848.)

*Signs furnished by the Respiratory Organs*—The manner in which respiration is accomplished furnishes occasionally a clue to the diagnosis of disease. For instance, costal respiration is observed when the contractions of the diaphragm are attended with pain; and, on the contrary, the respiration is called abdominal, when respiration is almost entirely performed with the assistance of the movements of the diaphragm, the elevation of the ribs being partial; when a stitch exists on one side of the chest, that side remains immovable during respiration.

In the healthy state, from eighteen to twenty-four aspirations may be counted in one minute. This number seldom rises to twenty-eight, or descends to twelve. But in disease, respirations may be much accelerated or slackened. Thus, in the meningitis of children, and in some cases of hysteria, it often descends below the average. When the number of inspirations observed in one minute is above thirty, a morbid state of the system may be asserted to exist. They may rise as high as eighty, and even be more frequent than arterial pulsation in the same subject. Simple febrile excitement accelerates respiration, but never increases the number of inspirations to more than thirty-two in one minute. If thirty-six inspirations be counted, disease of the heart or respiratory organs is exceedingly probably; if more than thirty-six, it is certain that some disorder of the kind is present.

All the causes which interfere with the free introduction of air into the chest accelerates respiration, whether the obstacle be seated in the larynx, trachea, bronchi, or in the lungs. Thus, in acute pneumonia, the respiration usually rises to thirty-two or thirty-eight; if it attains fifty, the case is almost invariably fatal. This happens in the adult; but in children under two years of age affected with pneumonia, you will often find sixty, and even eighty inspirations in one minute. In consumption, the respiration becomes greatly accelerated only in the last stage of the disorder; it frequently averages thirty. When, in cases of phthisis, the respiration becomes suddenly very much quickened, one of three occurrences is to be feared, viz., pneumonia, a rapidly forming pleuritic effusion, or pneumothorax. In pleuritis, acceleration of the respiration may be due either to the intensity of the pain in the side, or to the abundance of the effusion within the chest. When the morbid secretion has taken place in both pleural cavities, the frequency of respiration is greatly increased; but if, on the contrary, it has formed slowly, and only on one side, although very abundant, it causes only a very trifling increase of the number of inspirations, particularly if the patient be observed in repose. Abundant effusion in the cavity of the abdomen often augments the frequency of respiration, and the same is noticed in most diseases of the heart and of the organs of circulation. The nervous system has considerable influence over the phenomena which now occupy us; observe, for instance, the effects of mental emotion upon the respiration. In women we should not give quite the same prognostic value to increased frequency of respiration as in men; in the female,

a simply nervous disturbance, as in hysteria, may raise the respiration to sixty—a fact which we do not meet with in the male sex.

Respiration may not only be modified in its frequency, but also in its depth. The inspirations may be shorter or deeper, according to the state of the lungs. For instance, in pulmonary emphysema the respiration seems to be very deep—we say seems, because the depth is in these cases more apparent than real; the chest is elevated by a strong effort of the patient,—it is not, properly speaking, dilated, but the energy of the effort would easily lead an inattentive observer into error.

The regular succession of the respiratory movements may also be modified by disease; thus, in the convulsive period of acute meningitis, particularly in children, respiration becomes irregular and even intermittent. The passage of the air through the respiratory organs is silent during health, but in disease it may be attended with various sounds, generated in the larynx, trachea, or bronchi. In the larynx we may hear sounds during inspiration, or during expiration; the rhonchus produced by œdema glottidis accompanies expiration. These sounds are the result of a diminution in the diameter of the larynx, from hyperemia, swelling of the vocal chords, false membranes, tumours, or merely spasmodic contraction. Ulcers of the trachea, particularly if their edges be fungous, and if they are seated near the bifurcation, often give rise to morbid sounds during the passage of air through the tube; compression of the trachea by tumours, aneurism of the arch of the aorta, for instance, has the same effect. Further, we may hear, without applying the ear to the thoracic walls, morbid sounds originating in the bronchi, and also friction taking place in the pleura.

When the respiration is modified in these several manners, the patient experiences a sort of uneasiness, which has received the name of *dyspnœa*—a symptom towards which I must now call your attention.

*Dyspnœa* has several degrees; it may exist only in motion, or even in ascending motion, or it may also distress the patient when he is in a state of perfect repose; it then bears the name of *orthopnœa*. When *dyspnœa* is violent, the inspiratory muscles being insufficient for the purpose of dilating the chest, many other muscles lend their synergetic assistance, even those of the face, the contractions of which may enlighten the diagnosis, in giving to the patient a particular physiognomy characteristic of the disease; thus the movements of the alæ of the nose in the *dyspnœa* caused by pneumonia are most remarkable.

This symptom, being common to most diseases of the respiratory organs, cannot assist in distinguishing them from each other. We meet with it in diseases of the larynx, and it is always in proportion with the degree of obstruction existing within the air-passages. When tumours press upon the trachea, as in some aortic aneurisms, the oppression is occasionally excessive. In diseases of the bronchi we find *dyspnœa* again. For instance, in acute capillary bronchitis it is often more intense than in pneumonia; and in chronic capillary bronchitis it may become extreme with any temporary exacerbation of the malady. Hypersecretion from the bronchial mucous membrane also occasions much oppression, whether it occurs in acute bronchitis, or at the close of a certain number of acute or chronic disorders. Let us add that this hypersecretion may result from general debility; and, therefore, in the treatment of disease in general, we should carefully abstain from lowering the vital powers of the patient beyond a certain point, as the production of this accident might thereby be facilitated. In pneumonia, *dyspnœa* always exists. It may be slight, as in that form of inflammation of the lungs which often intervenes during the course of typhoid fever, but may also acquire a considerable degree of intensity. Consumption causes an amount of *dyspnœa* which is always proportioned to three conditions, viz., the number of the tubercles, the pulmonary alterations by which they are surrounded, and the rapidity of evolution of the morbid deposit. Sometimes long before any permanent cough is observed, the patients complain of a sense of oppression; in most cases, on the contrary, the *dyspnœa* is very slight during the incipient stage of phthisis; but if the tubercles are rapidly formed, as in acute phthisis, the oppression is excessively considerable. Pulmonary emphysema is not necessarily accompanied by *dyspnœa*, except in its advanced stage. In a very large number of cases, patients suffer from oppression only at very distant intervals, these intermittent attacks of asthma being referable to periodical attacks of bronchitis. But when emphysema has



lasted some time, and acquired a considerable development within the chest, oppression becomes intense and continuous, no fresh attacks of bronchitis being necessary for its appearance. The countenance of the patient is swollen and livid, the lips take a purple hue, and the physiognomy resembles that of persons suffering from disease of the heart. In pulmonary apoplexy, whether idiopathic or depending upon an alteration of the central organ of circulation, the degree of dyspnœa depends entirely upon the intensity of the apoplexy. In diseases of the pleura, dyspnœa may either be the result of the pain, by which the respiratory movements are impeded, or depend upon the pressure exercised upon the lung by effusions within the thoracic cavity. The former cause is more frequently productive of oppression than the latter. Indeed, in chronic pleuritis considerable secretion may have accumulated within the chest without any perceptible difficulty of breathing. But when the effusion has taken place very rapidly, when it is extremely abundant, and not only causes dullness on percussion of the posterior parts of the chest, but also of its anterior region, or when the morbid deposits have been formed on both sides, then oppression, more or less considerable, never fails to appear. Simple pleurodynia may occasion extreme oppression. Diseases of the heart may be said, in general, to be accompanied with dyspnœa—a remark which allows, however, numerous exceptions: for instance, valvular insufficiency of the aorta seldom causes any difficulty of breathing. In acute rheumatism we sometimes hear at the first bruit a murmur indicative of endocarditis, and still no oppression is complained of. But when disease of the heart causes disturbance of the pulmonary circulation, dyspnœa is a constant symptom. We should also add that towards the close of diseases of this nature, the bronchial secretion is usually much increased, and œdema of the lung supervenes—circumstances by which the tendency to dyspnœa is much augmented; ascites, abdominal tumours, or tumours developed within the thorax, may also become mechanical causes of oppression. In plethora and in anemia we find a certain amount of dyspnœa; and in nervous subjects it may be produced merely by emotion. In hysteria we meet with it as a very ordinary symptom. We must, however, distinguish two sorts of nervous dyspnœa. In one, it is caused by a disturbance of the cerebral influence over the respiratory organs; in the other, by a disease affecting the par vagum, and through that nerve the lung, to which the pneumogastric is partly distributed. Nervous dyspnœa is often very slight, occasionally violent, and frequently intermittent. We cannot, from the results of our own experience, doubt the existence of a purely nervous form of asthma, the attacks of which, often repeated, bring on readily the pulmonary alterations characteristic of emphysema.

*Alterations of the voice* are observed in disease, and may assist in its diagnosis. The causes of its changes may be seated above or below the larynx. We are acquainted with the special modification produced in the voice by perforations of the palate or enlargement of the tonsils; a slight alteration of the vocal chords changes its tone, and bronchial or pulmonary affections also modify it. Further, we find in nervous diseases the voice changed or suppressed, whether the malady occupy the nervous centres, or merely consist in a pressure exercised upon the course of the laryngeal nerves by some tumour or morbid production. We may say that all the causes which diminish the volume of the column of air to be expelled through the larynx during expiration modify or weaken the voice—a fact often observed in the very earliest stages of pulmonary consumption. In croup we usually find the voice suppressed. The larynx may also be affected with special neurosis, a sort of chorea confined to its muscles, the chief symptom of which is a sort of barking or involuntary emission of voice.

*Cough* is a symptom of great importance. We find it in diseases exclusively limited to the respiratory organs, and also in others which invade the chest only in a secondary manner. With regard to the former, we find cough with special characters in croup; it is not necessary to expatiate upon its barking sound. You are also acquainted with its tone in whooping-cough, in which a crowing inspiration is followed by several successive attempts at expiration. In bronchitis cough is also present—dry at first, loose in the second stage, and often more troublesome than in inflammation of the lung. Coughs do not always precede the formation of tubercular matter in the chest. During the first periods of phthisis, patients are

subject to frequent coughs, which at last become permanent. In some cases the permanent cough is observed from the beginning. It is a prevalent opinion in the unprofessional public that dry coughs are more characteristic of incipient phthisis than coughs attended with expectoration. We need hardly add that this is a mistake. A sense of heat and tickling in the throat is frequently complained of by patients, and some are also affected at the same time with a deep-seated pain within the chest. In pleuritis, cough is often subordinate to the existence of pain in the side: it is always a dry cough. Pulmonary emphysema is productive of a sort of cough, which has the characters of that of bronchitis. We said that this symptom might be noticed also in diseases, one only of the elements of which is to be sought for in the respiratory organs. Thus, amongst pyrexia, we find that measles are always attended with more or less cough, which sometimes precedes, and always accompanies, the prodromic fever, persists throughout the eruption, and usually decreases after its cessation. If it should last any length of time after the eruptive fever, it calls for some attention on the part of the medical practitioner, as it may be the starting-point of emphysema or pulmonary consumption. On auscultation of the chest, in the bronchitis of measles, seldom are any rhonchi detected. In the bronchitis of typhoid fever, on the contrary, sonorous and sibilous râles may be almost always heard in the chest. Sympathetic coughs have also been often noticed, expressive of the participation of the nervous system of the lungs to sufferings of the liver or stomach. Tænia is sometimes productive of a very troublesome nervous cough, which ceases when the worm has been expelled. In some hysterical patients we occasionally find an obstinate cough, merely produced by nervous disturbance.

*Expectorated substances* may vary in their nature, and in their origin. We will enumerate the various matters which may thus be rejected. Mucus, always arising from the respiratory organs; blood, which may come from the mucous membrane of the bronchi, from the pulmonary parenchyma, as in pneumonia, phthisis, pulmonary apoplexy, or gangrene of the lung; from an aneurism of the aorta, and in this latter case the blood is not always rejected at once in large quantities, but may for a certain number of days be expectorated in filaments, mixed with bronchial mucus. When the blood expelled from the lungs is rejected soon after extravasation, it is scarlet, fluid, and spumous; but if it has remained in the bronchi some time after exhalation, it may be dark and coagulated. A portion of this blood may also be swallowed, and afterwards vomited—a fact which may lead to some doubt as to its origin. Pus is frequently found in the expectoration. It may have been generated on the mucous surface of the bronchi, or in an accidental cavity formed in the lung after consumption or gangrene. An abscess collecting in the pleura may also be evacuated into the bronchi, and discharged by expectoration. The abscess may be seated in the neighbourhood of the respiratory organs, in the bronchial ganglions, for instance, or in a distant viscus, the liver, or kidney (Rayer). False membranes are sometimes expectorated. They are mostly formed in the larynx, but may have been secreted in the trachea or bronchi. Tubercular matter, originating in the lungs, or in the bronchial glands, particularly in children, should not be omitted in the enumeration of expectorated substances. Melanic matter has also been found, but more frequently a dark matter, identical with charcoal in a state of extreme division, and only in persons exposed to the inhalation of this substance. Let us also mention cancerous matter; hydatids, more generally coming from the liver than from the lung; cretaceous calculi; the residue of cured tubercles; remains of pulmonary or bronchial tissue, detached in tubercular or gangrenous cavities; such are the various substances found in the expectoration. In one instance, in which the stomach communicated with the spleen and the lungs, we met with the contents of the stomach in the expelled matter.

In acute laryngitis, simple mucus is ejected. When pus is suddenly thrown out, it indicates submucous abscess. In chronic laryngitis, blood, expectorated in small quantities, indicates an ulcer of the mucous membrane; if the amount of blood be at all considerable, its source is not in the larynx. A chronic form of croup has been described, in which the patients cough up false membranes; and this circumstance often exercises a most favourable influence upon the progress of the malady. Polypous concretions, and vegetations formed in the laryngeal cavity, have been rejected; also pus from an abscess developed in the organ, as

in a case published by Dr. Pravaz, of Lille: a tumour, soft and fluctuating, had been previously recognised by the introduction of the finger, and disappeared after the sudden expectoration of a certain quantity of purulent matter, with which two small concretions were also thrown up. The same author relates, in his inaugural thesis, a case in which two hydatids were found in the ventricles of the larynx; but we have never ourselves observed any instance of the kind.

Acute bronchitis is not, in its first period, attended with expectoration; but as the disease progresses, the cough becomes loose, and a colourless, transparent mucus, more or less viscid in its nature, is rejected, occasionally streaked with blood, if the cough be violent. This matter gradually becomes less transparent, and acquires a puriform appearance, decreasing at the same time in abundance, in proportion as the case progresses towards a favourable termination. In some patients the expectoration is puriform from the first; in others it never assumes that character. Occasionally, even the cough is dry from the beginning to the end of the disease. In chronic bronchitis the expectoration usually consists of a slimy fluid, more or less puriform in appearance. When dyspnoea is present, this matter is very viscid, and generally spumous. It is sometimes constituted by a homogeneous liquid, which bears the greatest resemblance to the expectoration in consumption; from which neither chemistry nor the microscope is able to distinguish it. The abundance of the rejected fluids may be very considerable, particularly in the aged, the general condition of the system suffering at the same time much less than it would, *à priori*, seem rational to suppose. The odour of the matter is not characteristic, and may accidentally acquire great fetidity. In some cases of chronic inflammation of the bronchi, no expectoration is observed; in others a peculiar granular mucus is thrown up, which has a remarkable tendency to solidify; and in both these cases pulmonary emphysema often follows bronchitis.

During the first two days of pneumonia, characteristic expectoration is seldom noticed; but after this period the rejected matter is viscid, transparent, spumous, and rusty in colour. As the disease advances, this fluid becomes darker and less frothy, and gradually resumes its natural hue, if the malady terminates favourably; if, on the contrary, it becomes darker and more viscid, or brown and more fluid, the prognosis acquires greater gravity. It has been often said that where the colour of the expectoration resembled that of the juice of stewed prunes, the circumstance indicated diffused suppuration of the lung; we believe that it points more to increased severity of the case than to that particular fact. In the aged, the expectoration is often of a reddish gray, and may completely be suspended some time before a fatal issue, either from a real cessation of the morbid secretion, or more frequently from loss of power to reject it. In the pneumonia of children no expectoration takes place; and when this disease is a complication of other ailments, consumption, for instance, the rejected matter is often deprived of its characteristic appearances. M. Remack, of Berlin, states (Archives, January, 1846\*) that in the expectoration of pneumonia, small concretions are rejected, constituted by fibrine, and incarcerating purulent corpuscles in their network; the shape of these concretions is the same as that of the bronchi. We have several times assured ourselves of the accuracy of this observation, which may assist considerably the diagnosis of doubtful cases. Chronic pneumonia presents no special expectoration.

Edema pulmonis and emphysema are not attended with any characteristic appearances in this respect. At the beginning of attacks of asthma the expectoration is usually suppressed, and returns at the close of the paroxysm. Pulmonary apoplexy usually causes hemorrhage and the rejection of a small quantity of blood, but not constantly. In gangrene of the lung, the sputa are thin, dark, and extremely fetid.

Pulmonary consumption, at its various periods, occasions an expectoration, the characters of which it is important to be well acquainted with. Mucus, pus, blood, concretions, &c., may be rejected, and their relative signification should be clearly understood. During the first period of phthisis the cough is frequently dry, or followed merely by the expulsion of pure mucus; blood is often rejected

\* See "Abstract," Vol. III. p. 180.



at this period, with the characters which we have elsewhere described. Calculi, also, may be expectorated, formed of crude tubercular matter. When softening occurs, the appearances are usually those observed in bronchitis, the sputa being sometimes streaked with a substance of a yellowish, dead-white colour, supposed to consist of detached tubercular secretion: also, occasionally, granular agglomerations of tubercle are found floating in the mucus; hæmoptysis may occur at this stage: but when cavities have formed in the lung, the appearances are more characteristic. A large tubercular mass may be expelled suddenly, but in general its elimination is gradual. The discharge is thus formed of three parts, viz., bronchial mucus, tubercular matter, and a purulent fluid secreted by the walls of the accidental cavity. According to the relative proportions of these three elements, the expectoration varies in its characters. In most subjects it separates into two layers—a semi-transparent, gummy fluid, and a more opaque, solid matter. The latter may be suspended in flakes, or flat on the surface of the fluid in small round patches (nummular expectoration). At a still later period of the disease, the semi-transparent matter is no more to be found, and the matter consists merely of a thick, purulent fluid. At this stage of phthisis, hæmoptysis is more rare than in the first periods. The odour or taste of the expectoration is not characteristic, in spite of the Hippocratic aphorism, that in consumption it is at first salt and afterwards sweetish. The quantity rejected varies greatly, not only in several, but even in the same individual. Shortly before a fatal termination, the expectoration may be suppressed, or become looser, from the enlargement of the caverns. Microscopic examination shows in the sputa of consumption the presence of pus, and blood-corpuscles, of epithelium, of false membranes, and of pulmonary tissue. When a piece of tubercular lung is examined with the microscope, numerous corpuscles can be seen, with the particular form described in the first series of these lectures. But it is very uncommon to meet with these special granulations in the sputa, being, as it would seem, dissociated before they are expelled from the chest by the efforts of cough. It has been said, and it is quite true, that tubercular sputa sink in water, and burn with a flame when desiccated: but these characters cannot distinguish them from the sputa of bronchitis, because they result from the presence of pus, which may exist in one disease as well as in the other.

When hydatids form in the pulmonary organs, they may be expelled by expectoration. The sputa of cancer of the lung are said to resemble gooseberry jam in colour and consistency, but this fact requires further confirmation.

In diseases of the pleura the expectoration is usually absent, or resembles that of bronchitis; but pleuritic effusions may suddenly be discharged by the bronchi, after ulceration of the surface of the lung. True pus is thus rejected, and penetration of air into the pleuritic cavity soon communicates to its contents a fetid alliaceous odour. The consecutive discharge may continue for a considerable time, and may be recalled after temporary cessation by change of position of the subject, by which a change is also effected in the relative situations of the pleuritic effusion and of the pulmonary fistula. Even after long duration these cases are susceptible of recovery.

In diseases of the pulmonary organs the *sensibility* of the patient may be modified, and furnish signs to the diagnosis.

Many acute or chronic diseases of the larynx may exist without pain, and present a striking contrast between the great change of the voice and the total absence of suffering. When pain accompanies ulcers of the larynx, it is more marked when the sore occupies the vocal chords, or is situated above them, than when it is placed below the ventricles. Affections of the trachea are seldom painful. Acute bronchitis is usually attended with a distressing sense of heat within the chest, which increases with the cough, or with the inspiration of cold air. This pain may occupy the sternal region, or be complained of between the shoulders. Pneumonia, like other inflammations of parenchymatous organs, is seldom of itself a painful disease. "Pulmonum inflammatio," says Boerhaave, "plus affert periculi quam doloris;" a perfectly accurate remark, the stitch in the side, which so usually accompanies pneumonia, being in most cases due to pleuritic complication. Many consumptive patients suffer very little; others, on the contrary, are frequently troubled with pain, due to the participation of the pleura in the disorder.

—a fact demonstrated by the adhesions found within the thorax of these subjects on post-mortem examination. Some patients feel a sort of tightness round the chest, and are fully aware, from the nature of the sensation, that their respiration is not complete; in others, a sense of uneasiness is complained of in the superior part of the chest: and in these cases, on dissection, caverns are often found in these regions, separated from the pleura by very thin walls. Occasionally, percussion of the chest, and even auscultation with the stethoscope, cause pain in phthisis. Pain between the shoulders is very generally looked upon as a sign of consumption; we believe that the importance of this symptom has been much overrated; it seems to us to be merely a muscular pain, due to debility, and observable in most cases of chronic disease; it is, for instance, almost constant in chlorosis. Hydatids and cancer of the respiratory organs are productive of suffering only when the pleura is affected. Acute pleuritis seldom exists without pain; its intensity is variable from a trifling to a most intense stitch in the side. It is usually seated below the breast on the affected side, and increased by motion, pressure, cough, or inspiration. It may extend to the whole thoracic wall, or be limited to the cartilaginous edges of the ribs: in diaphragmatic pleurisy, it spreads to the epigastrium, and even to the abdominal parietes. An ingenious explanation of this pain has been offered by Dr. Beau (see “Abstract,” vol. vi, art. 15), and seems confirmed by anatomical investigation. That gentleman attributes it to inflammation of the intercostal nerves, which, in the posterior third of their course, lie in close apposition with the pleura. Irritation of a nerve, causing pain to be felt in the region of its terminal distribution; excitement of the posterior part of these nerves in pleurisy naturally occasions a suffering which is referred to the anterior region of the thorax, immediately below the breast.

#### ART. 18.—*The Alphabet of Auscultation.*

[Mr. Corfe gives the following succinct epitome of the principal stethoscopic indications in pulmonary disease. These are:]

*Two dry sounds.*—Rhonchus; sibilus.

*Two moist sounds.*—Small crepitation; large ditto.

*Three vocal sounds.*—Bronchophony; ægophony; pectoriloquy. Thus:

1. *Two dry sounds.*—*Rhonchus*, or snoring, heard in the larger bronchi, is produced by an intumescence or œdema of the mucous membrane of the bronchi, on which phlegm impinges. This sound occurs especially at the bifurcation of the bronchi, where the membrane is bevelled off, and is called by the French physiologists the “*eperons*,” or spurs of the bronchi. When the fingers are spread out, the reflected skin from the base of one finger to that of the other, represents a magnified form of this reflection of the bronchial mucous membrane. The sound denotes the existence of bronchitis. The pathological change above described, is well exhibited, in other respects, in conjunctivitis, when effusion exists beneath this membrane.

*Sibilus*, wheezing, whistling, or cooing. Produced by the same cause as above described, with the exception that it originates in the smaller bronchi, so that the grave sounds of a bassoon, and the shrill sounds of a piccolo, or the air drawn through the semi-closed lips well moistened with saliva, and through the larynx as in snoring, afford a tolerably accurate representation of these two bronchial sounds.

2. *Two moist sounds.*—*Small crepitation* is the invariable symptom of the first stage of pneumonia, and is produced by the inspired columns of air passing through a series of inflamed pulmonary cells, which are partially clogged with sero-sanguinolent secretion. The act of rubbing the hair between the fingers gives some notion of this important diagnostic symptom. I need scarcely say that emphysema from fractured ribs and wounded lung will cause this sound also; but, as I do not wish to confuse the student by describing those morbid changes produced by traumatic causes, I shall omit any further notice of them now.

*Large crepitation* is similar to the breaking of large soap-bubbles, and is heard over the lower lobes behind, in cases of advanced or chronic bronchitis, the third stage of pneumonia, and in emphysema with œdema pulmonum.

3. *Three vocal sounds.*—*Bronchophony*, or increased resonance of the voice, is

produced by a solid portion of lung acting as a better conductor of sounds than a vesicular or healthy portion; so that the voice of the patient rings under the ear of the auscultator. This solidification is either the result of pneumonia, or of a mass of aggregated tubercles in the upper lobes. In the latter case, it is heard under the clavicles; in the former, it is usually detected over the lower lobes behind.

*Ogophony*, or bleating of the goat. A sound peculiar only to the presence of a small portion of effused lymph between the surfaces of the costal and pulmonary pleura, the result of pleuritis. It is not heard when the effusion is copious, but it is again heard when the effusion is in the course of absorption. Hence it is an unfavourable auscultatory sign in the early, and a good one in the latter, stages of pleuritis. This sound should be listened for over the lower lobes behind; the ordinary seat of the early occurrence of pleuritis.

*Pectoriloquy* is the effect of the intonation of the voice passing up the stethoscope, as though it came from within the chest rather than from the mouth of the patient. Its production is the unequivocal evidence of a cavity in the substance of the lung, which cavity is usually in the upper lobes, and therefore this vocal sound is to be sought for under the clavicles. If you place the stethoscope over the wings of the thyroid cartilage, and make the person talk, you have a fair specimen of this vocal sound in the above diseased change.

*Medical Times*, Feb. 1848.

ART. 19.—*On Spasm of the Glottis in the Adult.* By Dr. WARDELL.

(*Prov. Med. and Surg. Journal*, Oct. 6, 1847.)

[Dr. Wardell narrates two cases, as illustrative of spasm of the glottis in the adult. The first is that of a plethoric girl, æt. 18, with disturbed uterine functions, who was suddenly seized, April 8th. with dyspnœa and croupy respiration. Pulse 76, countenance anxious; stridulous respiration, audible on auscultation; no abnormal pulmonic sounds; she was bled to deliquium with improvement, and next day, at 9 A. M., was free from dyspnœa, though the croupy sound was still audible. At 11 in the morning the dyspnœa suddenly returned, and suffocation appeared imminent. P. 90, the finger introduced into the fauces, caused an effort to vomit, after which a deep inspiration was taken, producing immediate relief; she was ordered ether and ammonia, and mustard cataplasms. At 3 P. M., another paroxysm came on abruptly, as before, accompanied by more defined hysterical symptoms. P. 94. Antispasmodics and sedatives were persisted in, and the patient eventually recovered.]

The second case, in some respects similar, was that of a lad, æt. 16, who, after exposure to damp, was seized with hoarseness and vomiting, with aphonia, to which, in a day or two, was added a severe paroxysm of stridulous breathing. This was relieved by bleeding, leeches to the throat, ether, and opium.

After noticing the analogy of these cases to infantile laryngismus, and the greater frequency of its occurrence in young subjects, the author proceeds as follows:—]

On a perusal of the first of these cases, it is seen that the patient was a young and somewhat chlorotic-looking girl. The affection, as in children, came on with great suddenness. There was a degree of attendant spasm in the muscles proper to the chest, as evinced by the sensation of constriction experienced when full inspiration was attempted. The stethoscope at once proved that the disease was not in the chest, but in the larynx, notwithstanding the sense of pain in the chest, and this was the partial closure of the glottideal chink. The bleeding produced relief by its induction of general relaxation. On the night of the 8th inst., she had no return, nor, on the morning of the 9th, were there any pyrexial symptoms indicative of the existence of inflammatory action. The paroxysms which subsequently came on during that day, arose in a moment, and during their continuance, as seen from the reports, there were hysterio-epileptical symptoms, in addition to those immediately produced by the asphyxial condition under which she laboured. It has been said that damp and cold have nothing to do with the production of laryngismus stridulus, and that croup, on the contrary, is mainly brought on by these conditions. It is quite clear, from the above cases, that the



first of these statements is incorrect, as in both instances wet and cold were the exciting causes. The girl, Cooper, had been employed most of the day on which her illness commenced, in pumping and carrying water out of the house, which had come in during a great flood of an adjacent stream, and her feet had been wet for some hours. The boy stated, that the day before his attack, he was thoroughly wet, and on the following morning, he had, in a great measure, lost his voice.

The instance of John P. supplies a good example of one of those cases but rarely observed, of distinct hysterical symptoms in the male. When such become manifest in this sex (the male), it is about puberty, when the generative organs, and the body generally, undergo a great change, or in the persons of nervous and excitable young men, though cases have been recorded of distinct hysteria occurring in a stout plethoric man. Sydenham, Hoffman, Whytt, Ferriar, Villermay, Georget, Conolly, &c., favour the opinion that undisputed hysteria may occur in the male; when in this sex it is never, however, so unequivocally developed as in females, perhaps owing to the greater mobility which there is in the latter than the former. The present writer knows a married gentleman, of two or three and thirty years of age, who at times is decidedly hysterical, being often somewhat melancholic, highly irritable, has the *globus hystericus*, &c., rendering no doubt whatever as to the nature of the affection. During the paroxysms, John P. presented much the same kind of symptoms as the girl Cooper. There was slight lachrymation, a sensation of choking, a wild, incoherent-like tossing, with great difficulty of breathing, and a congested state of the countenance, which demonstrated asphyxial symptoms. The hands were suddenly clenched, and the inferior extremities involuntarily moved in convulsive twitches, and he intimated that he felt a painful tightness at the chest and throat. From these facts, then, it would be difficult to dispel the opinion of there being evidence of true hysteria present, with whatever other conditions associated.

Respecting the treatment of the two cases, it is quite undeniable that medicines which produce a ready sedative and antispasmodic effect upon the nervous system constitute the class of remedies most correctly indicated. Our object is to overcome the morbid irritability which there is in the nervous centres, and, when the paroxysmal attacks have subsided, to strengthen the system by means of tonics, of which the mineral kind are the best, especially the preparations of iron. Both, it is observed, were bled. Blood-letting was had recourse to, on two accounts,—first, to relieve the congested state of the vital organs, especially the lungs, which had been induced by the imperfect aeration of the blood, as evinced by congestion of the features, sense of suffocation, incoherence, &c.; secondly, to promote general muscular relaxation, thus overcoming the spasmodic rigidity in the muscles proper to the larynx, and therefore averting the dangers of immediate suffocation. Unless absolutely indicated by the immediate peril of the patient, there can be no doubt whatever that the abstraction of blood in chlorotic women is not good practice, and indeed we should then always avoid having recourse to the lancet, when other remedies can be safely substituted, for the more we bleed, the greater will become that mobility of the nervous system which is the prelude to, or perhaps the main cause of, these conditions. It is true, however, as all men of experience must acknowledge, that under these kind of affections delicate young women will occasionally endure, not only with impunity, but be benefitted by the loss of large quantities of blood.

[In conclusion, the author propounds the following deductions regarding the affection in question:]

1st. In the young, it may be detected from croup by the suddenness of its super-vention, occurring in a dry and warm atmosphere, where, perhaps, no cases of croup are to be observed; by the intermissions of natural breathing; by its taking place at the time of teething, or where there is some obvious source of nervous irritation; by the entire absence of pyrexia, and by the non-existence of the traces of inflammatory action after death.

2dly. In adults, it comes on as quickly as in children; occurs generally in the persons of hysteric females; is diagnosed from laryngitis by the absence of fever during life, and of lymph on the parts after death, and by its sudden mode of

accession, by the great utility of an antispasmodic and the inoperative effects of an antiphlogistic mode of treatment.

3dly. In the paroxysms it can be distinguished from epilepsy, by the absence of foaming at the mouth, and biting the tongue, and by the intellectual faculties remaining entire, together with the positive symptoms before described.

Lastly. On application of the stethoscope to the lateral aspects of the larynx, a loud whistling noise is heard, as if produced by blowing through a small pipe, or when a stream of air forcibly passes through a narrow aperture: hence by these positive signs, and negatively by the absence of bronchial murmur in the thorax, it is broadly distinguished from bronchitis, the only other affection with which it might be confounded.

[In a subsequent number of the same journal, Dr. Ogier Ward takes objection to the spasmodic nature of the above cases, contending that they were instances of inflammatory œdema of the glottis. His words are:]

The disease in Dr. Wardell's first case occurred in a girl, æt. 18, who had taken cold, and began suddenly with dyspnœa, and loud croupy respiration, lasting seventeen hours without intermission, but with short remissions, recurring again four hours afterwards, continuing some time, and being attended with symptoms of a spasmodic character. The attacks ceased on the third day, having been combated by bleeding to fainting at first, followed by hot drinks, and a full dose of morphine at bed-time. The treatment on the following days was a combination of opiates and antispasmodics, with counter-irritation.

The next patient, a boy, æt. 16, had also got wet: his complaint began the next day with hoarseness, which was relieved by linimentum ammoniæ, and the ordinary treatment for a cold. Eleven days afterwards he had an attack of dyspnœa, with crowing inspiration, which lasted two hours, and was relieved by bleeding and opiates. It afterwards returned with violence, and was attended with convulsive movements of the limbs, and hard, accelerated pulse, the patient being an epileptic subject. The treatment was similar to that of the former case, and proved successful the second day.

Now in regard to these cases, both of which were attended with febrile symptoms at the outset, I would ask what evidence have we of spasm of the glottis, that may not as readily be adduced in proof of the inflammatory nature of the attack? Indeed, in a third case, Dr. Wardell admits the existence of inflammation in the larynx, and argues, justly, that the irritation had produced a spasmodic closure of the glottis. That there was a constriction of the glottis in these cases can hardly be doubted: but, as Dr. Wardell must be aware that true spasm, or closure of the glottis, from whatever cause, cannot continue for more than a few seconds without being followed by death, it is to be regretted that he should have given us these interesting cases under the title of spasm of the glottis, and that in his observations upon them he should have endeavoured to identify them with the infantile complaint. It would have been better had he imitated the reserve of that excellent pathologist, Dr. Copland, who does not admit any disease under that name into his Dictionary of Medicine.

[We agree with Dr. Wardell, that his cases were instances of spasm of the glottis in the adult, which are far from being as uncommon as represented. We have seen three or four instances, at least, of this affection, as a symptom of reflected uterine irritation. We have treated the paroxysm in the adult as in the child, by dashing cold water on the face, emetics, &c. Had they been cases of acute laryngitis, as supposed by Dr. Ogier Ward, the pulse would not have remained under 100, nor would the remissions have been so distinct.]

*Prov. Med. and Surg. Journal*, March 25, 1848.

ART. 20.—*Aphonia curable by Inhalation of the Fumes of Benzoin*.—An anonymous writer in the "Provincial Medical and Surgical Journal" states that:

A middle-aged unmarried lady consulted him about her voice, which she had lost for twelve years, never from that period having been able to speak above a whisper. There was no cough and no evidence of inflammatory or organic change about the larynx. She was a nervous person, and he therefore considered the aphonia to arise from hysterical disinclination to use the muscles of the larynx. Not knowing what treatment to advise, he recommended that she should burn

common fumigating paper, which is made by impregnating blotting paper in the nitre of benzoin, and inhale the fumes once in the day. A perseverance in this plan for four months was followed by restoration of the voice. The improvement was gradual.

The fumigating cards are made in this manner: a sheet of thick white blotting paper is brushed over with a saturated solution of nitre till it is thoroughly wet, and when dry the compound tincture of benzoin is applied in the same manner. The paper is cut into slips three inches long by one and a quarter broad. When burning, they emit a dense white smoke, which is to be inhaled.

[A second case equally successful is related.]

*Prov. Med. and Surg. Journal*, March 22, 1848.

ART. 21.—*On the Employment of large Doses of Tartar Emetic in the Treatment of Pneumonia, especially in Children.* By M. HERARD.

(*Union Médicale*, No. 127.)

Dr. Herard observes, that although it is now universally allowed, that doses of tartar emetic, which toxicologists heretofore pronounced poisonous, may be administered with safety, yet the greatest discrepancy of opinion prevails as to the amount of benefit derivable from these, notwithstanding the question has received so much illustration from very able writers. Having had the opportunity of witnessing the treatment of pneumonia by tartar emetic at the Hôtel Dieu, by M. Sandras, and at the Hôpital des Enfants, by MM. Baudelocque and Blache, and this in a great number of cases, he believes that the results may be advantageously published, especially as the antimony was the only remedy employed. He does not agree with those who consider that because we have so powerful a therapeutic agent as bleeding, inquiries like these are superfluous; for not only is it desirable to possess more than one efficacious means, especially if their conjoined use is found to diminish the chance of death, and hasten convalescence, but there are cases in which bleeding cannot be performed without danger, as in ataxic pneumonia, particularly that of drunkards, and in pneumonia which manifests itself in persons already exhausted by prior diseases, or by being surrounded with anti-hygienic circumstances. Children too, at least those who are found in hospitals, ill bear blood-letting, even in its mildest form.

*Dose, and mode of administration.*—In the adult, the dose has been rapidly raised from five or six to ten grains, but never carried beyond this; while in children, commencing with one grain and a half or two grains, it has rarely reached five grains. It has always been administered in a julep, giving a spoonful or two every hour or every second hour, suspending it for two or three hours after meals, and preventing the patient drinking too much of ptisans while taking it. With such precautions, the medicine becomes easily tolerated, the great error of practitioners being the administering it in too large a quantity of fluid. Moreover, a small proportion of syrup of poppies or gummy extract of opium is always added to the julep.

*Action on the Economy.* 1. *On the alimentary canal.*—The author's investigations in nowise confirm the assertions of those who state that inflammation of the bucco-pharyngeal mucous membrane is a common result of the employment of large doses of antimony. In four or five cases only out of sixty in which these were given, did he meet with a slight aphthous ulceration, apparently resulting from the child's retaining the julep in the mouth before swallowing it. In seven only of thirty-one infants did the tartar emetic produce repeated vomiting and purging; in twelve the tolerance became established by the second day; while in the rest the symptoms were absent from the beginning. As a general rule, tolerance is more rapidly and durably established as regards the stomach than the intestines. Diarrhœa is, however, seldom increased by the antimony, and in some cases obstinate constipation follows its use. When tolerance is of somewhat difficult establishment, it seems to be more readily brought about by increasing the dose, and the frequency of administration, than by a contrary proceeding. After the fever has subsided, and the medicine is only continued because of the persistence of some local symptom, tolerance is still maintained. Some patients even take it at their meals, and in others it seems to excite the appetite.



2. *Circulation*.—All observers agree that antimony exerts a marked effect in diminishing the number of the pulse. This, in the adult, rapidly falls from 105 to 80, 70, 60, or even 45. In the child the diminution is less marked and less permanent, the pulse still retaining somewhat of the oscillatory character proper to the time of life. This effect upon the pulse cannot be said to result simply from the ameliorated state of the patient, since it is observed the very next day after giving the antimony, and during the existence of very grave pulmonic lesions, ascertainable by the stethoscope. More than once a pulse, which had descended to 50, has risen to 70, on discontinuing the antimony, again to fall on its resumption. This effect upon the pulse is usually more marked in proportion to the ease with which tolerance is established. Simultaneously with the diminution of the number of the pulse, there is sometimes, but not always, an enfeeblement of the arterial and cardiac pulsations; but the intermissions and irregularities mentioned by Trousseau have not been observed by the author. The effect upon the pulse is sometimes long in disappearing, this continuing slow for several days after the suspension of the medicine.

3. *Respiration*.—This, as well as the pulse, has almost always been found slower than natural, but its condition is much more difficult of exact appreciation, especially in the child. It is best examined during sleep, and then is found sometimes to have become affected even by the second dose.

4. *Secretions*.—Transpiration has not seemed either in the adult or child to be increased by large doses of antimony; nor has the increased secretion of the urine, noted by some authors, been observed.

*Mode of action*.—Many excellent observers explain the curative agency of antimony in pneumonia by the powerful sensation it produces upon the alimentary canal; and M. Chomel attributes some of the advantage to the mechanical effect which the repeated vomitings exert in disgoring the lungs. But if these explanations are correct, the medicine should be given in smaller doses, for these exert a far more powerful effect upon the alimentary canal than the larger ones; and every emetico-cathartic medicine might be expected to operate beneficially. In fact, the most marked benefit is derived from the use of antimony, just in those cases in which its complete toleration prevents any effect being produced upon the stomach or intestines. According to others, it determines towards the skin the morbid material which had become concentrated upon the internal organs; but the slight amount of increased transpiration ill accords with this explanation.

The rapid and marked depression of the circulation and respiration has been differently explained. Some, as Mialhe, have seen in it a chemical action, by which the oxidizing power of the lungs upon the blood becomes diminished; while others, as Trousseau, believe that the antimony admitted into the circulation acts directly through the nervous system upon the heart and inspiratory muscles. The lung consequently receives in a given time, a less quantity of blood, and has, as an instrument of hæmatisis, less blood to elaborate; and it is to this repose of the diseased organ that we may refer the resolution of the disease. To this it may be objected, that antimony is as efficacious in some other inflammations, as rheumatism. The author of the present paper is not disposed to add to these hypotheses, but observes that, however explained, the diminution of the number of the pulse is, in some measure, the index of the beneficial effect of the remedy. When this is marked and rapid, a cure is almost certain.

*Therapeutical Effects*.—The antimony, in the present series of observations, was administered to nine adults and thirty-one children. Of the former, one patient, admitted in an advanced stage of the disease, died; and the rest were completely cured. Of the children, seven died; two falling victims to tubercular pneumonia. In the other five, lobular pneumonia was very extensive; and five in thirty-one is a very favourable proportion in a disease so fatal as is the pneumonia of young children in an hospital. Lobular pneumonia is far less amenable to tartar emetic than the lobar; and those cases of broncho-pneumonia, as M. Guersent terms them, occurring in children under two years of age, are generally far more efficaciously treated by emetics than by antimony given in contra-stimulant doses. For the same reason, probably, the Rasorian method is less successful in aged persons than in the adult; for it is well known that at this period of life, pneu-

monia is complicated with bronchitis, and the characteristic tubular *souffle* is often absent.

So, also, in pneumonia succeeding to bronchitis, M. Sandras has found antimony far less efficacious than in cases of pure pneumonia. The most remarkable fact among the present cases was the rapid disappearance of the bronchial *souffle*, and its replacement by crepitant or sub-crepitant râles. Bleeding itself does not produce so rapid a passage from the second to the first stage of the disease. Frequently on the day of commencing the antimony, bronchial respiration, with bronchophony and resonance of the cough over the half of a lung, were ascertained, and the next day râles, more or less fine, might be heard over this entire space. Had this phenomenon been met with only once or twice, we should have explained it by the undoubted changeableness of the stethoscopic signs in childhood; but the result was obtained in so many children, that it would have been impossible not to refer it to the antimony, if even it had not been equally exhibited in the adult. The crepitant râle, on the other hand, persists with remarkable tenacity, and, becoming assimilated in character to the large, moist, sub-crepitant râles of chronic or subacute bronchitis, may extend far into convalescence, every other sign of returning health being present. The rapidity with which convalescence takes place, is, indeed, one of the most remarkable and advantageous results of the use of antimony. It can hardly be said to exist, so rapidly does health return, giving this method of treatment an infinite advantage over blood-letting in this respect.

Notwithstanding his conviction of its great efficacy, the author would not recommend tartar emetic as an exclusive remedy, believing, as a general rule, that the disease in adults is most advantageously treated by combining the antimony with venesection. It enables us to do with fewer blood-lettings, while these favour its absorption. But, to render it of service, practitioners must be convinced of its therapeutical importance, and prescribe it from the commencement, not as a mere accessory, but as an heroic remedy. In children *above two years of age*, it should be regarded almost as an exclusive medication, although in exceptional cases one or two emissions of blood or a blister may be required; this last, however, often proves a dangerous remedy in hospitals.

ART. 22.—*Delirium in Pneumonia. Clinical Lecture by M. GRISOLLE.*—Delirium is one of the most frequent and most severe cerebral accidents by which pneumonia can be complicated. One-third of the cases in which this complication is observed, refer to habitual drunkards; the seat of inflammation in the summit of the lung has also been considered as having considerable influence upon the production of delirium; but recent observation has not fully confirmed this very generally adopted opinion. Out of twenty-seven delirious cases of pneumonia, observed by Dr. Grisolle, in nine only was the summit affected; the basis was inflamed fourteen times, and the middle lobe only in four patients. Professor Andral and M. Briquet had come to the same conclusion. It is, however, quite correct to say that, when both lungs are affected, delirium is more frequent. It is more common in men than, in women in the proportion of twenty-one to six; and it is more usual between fifty and sixty years of age than at any other period of life. Drs. Hourman and Dechambre state that delirium usually accompanies pneumonia in the aged pensioners of La Salpêtrière. The delirium makes its appearance at the end of the first week, or the beginning of the second, after the outset of the disease, and varies in its intensity from quiet divagations to the most violent sort of furious raving. The appearance of delirium during the progress of pneumonia increases the severity of the prognosis; when the delirium is a predominant symptom, particularly if the pulse be quick and small, or slow and soft—in a word, if absence of harmony is observed between the extent of the local damage going on within the chest, and the amount of vascular reaction—musk, recommended by Dr. Récamier, should be employed in doses of 10 to 15 grains daily, in pills. When the patient is a person addicted to fermented liquors, art possesses a greater number of resources; opium should be first employed, and is generally successful; it should be exhibited until sleep has been procured; when the patient wakes, the delirium has usually departed. A little wine, particularly at the beginning of the delirium, will sometimes suddenly arrest its progress.

[Delirium is a more common accompaniment of pneumonia than is here represented. In children it is frequently one of the first symptoms; we have seen it before crepitation was fairly established. We believe in the adult it is an indication of extent rather than localization of the inflammation, and for this reason it is that it must be considered as an unfavorable sign. In intemperate persons its prognostic value, as regards the state of lungs, is less, as in such habits delirium accompanies any attack which lowers the vital powers. Ed. H. Y. A.]

*Medical Times*, Jan. 29, 1848.

**ART. 23.—Differential Diagnosis of Pneumonia and Pleuritis.**—The following points chiefly deserve attention: 1st, the resonance of the voice is clearly perceived in pneumonic, but never in pleuritic exudations; chiefly in the former when the voice is neither high nor feeble; 2d, in pleuritic exudations, percussion can distinctly limit the healthy and diseased regions, whereas, in pneumonic, the dullness on percussion vanishes only by degrees; 3d, on account of some cells still retaining air, even amidst the infiltrated lung, the tone of percussion is not so perfectly dull in pneumonic exudations as in pleuritic—for the same reason, the resistance of the chest is less in the former; 4th, whenever the dull tone is perceived only at the angle of the scapula, and not likewise on the anterior surface of the chest, the exudation is necessarily of pneumonic origin; 5th, enlargement of the thoracic walls never occurs, as a consequence of pneumonic exudation; on the contrary, as a consequence of pleuritic exudation, it constantly occurs in children, and very frequently in adults. Pleuritic exudation, when on the left side, may be easily mistaken for an enlarged spleen; but in such cases, it should be borne in mind that the surface of the pleuritic exudation has a tendency to cross the ribs, whereas the tumour of the spleen invariably extends in the direction of the ribs.

*Clinical Notes taken in the Hospital of Prague. Hannoverische Annalen*, 1847; and *Monthly Journal*, 1848.

**ART. 24.—Chloroform in Asthma.**—Mr. Chandler reports the following instance of the successful application of chloroform in asthma:—

The patient, a lady æt. 56, had a severe attack of asthmatic breathing, so that from nine in the morning till twelve the next day she sat erect in bed gasping for breath. Having bled her previously, Mr. Chandler was reluctant to repeat the operation, and resolved to try chloroform. Half a drachm was accordingly poured into a sponge. In less than a minute she became excited and hysterical, but soon she sank on the pillow, drawing deep, prolonged inspirations, between each of which, perhaps, eight could be counted. I now withdrew the sponge, opening the curtains to admit air. Respiration gradually became more regular, and she lay without motion, the body well thrown back on the bed, not the slightest vestige of spasm remaining. This state continued until four o'clock, the patient apparently half sleeping, conscious of what was passing in the room, when she sat up and took some food, describing her sensation as having been exceedingly pleasurable. Shortly afterwards she enjoyed a quiet sleep for some hours' duration, and the following morning she was quite quiet, no return of spasm, and no ill effect from inhalation; she is now comparatively well. I tried the vapour of sulphuric ether in this case, some time ago, not only without success, but with much increase of the sufferings of the patient.

*Medical Gazette*, and *Prov. Journal*, Jan. 29, 1848.

**ART. 25.—New Diagnostic Sign in Emphysema of the Lungs.**—Mr. Corfe has the following remarks as part of his papers on semeiotics:—

But an observation ought here to be made of a fact which will help to a decision on the nature of the disease before the ear is placed on the chest of such a patient. It is this: that if there is emphysema to any extent, and it has reached the upper lobes—for emphysema usually begins in the lower lobes, and spreads upwards—each act of coughing produces "hernia of the lung," so to speak, in that triangular space which is formed by the clavicles, sterno-cleido, and omohyoidei muscles. At this point, and at this point only of the thorax, we know that the pleura is wholly unprotected by muscle; and, as the lungs are jerked up by each distress-



ing effort of hard coughing, the emphysematous lung and pleura are forced up into this triangular space, and may be seen as one distinct tumour.

This appearance alone has often enabled me to form my diagnosis of a pair of emphysematous lungs before I had even applied my ear to the chest.

*Medical Times*, March 18, 1848.

#### SECT. IV.—DISEASES OF THE CIRCULATORY SYSTEM.

ART. 26.—*Extract from Professor Andral's Lectures on General Pathology.—Semiotics of the Circulating System.*

(*Medical Times*, Jan. 1, 1848.)

1. *Signs furnished by the state of the Heart.*—All the signs furnished by examination of the heart are not obtained by physical means. The latter are, no doubt, the most important; but we must also study those which are purely functional. Thus *palpitations*, or increased violence of the pulsations of the heart, may accompany every morbid change of that viscus, without pointing to any one in particular. This symptom is sometimes more marked in incipient disease than in the more advanced stages of valvular alteration. Palpitations may also be merely a dynamic disturbance not connected with any anatomical alterations of the organ. Their cause, in such cases, may reside in a primary alteration of the nervous system, and be accompanied with oppression and vertigo, simulating disease of the heart; but in these instances the increased action is variable in its intensity and in its causes. Alterations of the blood, plethora, and anæmia, e. g., occasion, secondarily, disturbance of the nervous system, and also produce palpitations, sometimes of a violent nature. Palpitations are, therefore, a common symptom of both organic and dynamic affections of the heart; and, in order to recognize the real nature of the latter, it is indispensable to have recourse to other sources of diagnosis.

*Pain* in the precordial region is usually attributed by patients to a morbid condition of the heart; but the pathologist should recollect that it may be merely neuralgia of some intercostal nerve, and also, on the other hand, that true acute pericarditis may be totally unattended with any pain. Endocarditis is still more frequently unaccompanied by suffering, nor is any usually observed in the various alterations of nutrition of the heart. Neuralgia of that organ is a disease the existence of which cannot be denied. As a sign of organic lesion, we consider palpitations as more important to the diagnosis than pain. We may also add, that we are not satisfied that the white patches of the pericardium, or the partial adhesions so commonly observed within that cavity, have not something to do with the presence of more or less tenacious pain in the præcordia.

The principal phenomenon in *syncope* is the arrest of the action of the heart. This we observe in the first place when that organ is primarily affected, as in pericarditis, or when air has been introduced, accidentally, into the veins; it is not so well demonstrated that polypous concretions within the heart can occasion this symptom. Secondly, we again notice syncope when, the heart not being primarily affected, a large quantity of blood is suddenly abstracted, or even fixed for a time in any distant part of the body, as it is during the application of the immense "cupping-boots," if we may use the term introduced into practice by Dr. Junod. Again, after too rapid delivery, after paracentesis abdominis, internal hemorrhage, or sudden emotion, producing great nervous disturbance or intense pain, and in hysteria, syncope is frequently met with. One variety of pernicious fever is characterized by the presence of this accident; and sometimes sudden syncope, which may terminate fatally, occurs as a unique and primary symptom.

We now turn to the history of the physical signs of disease of the heart and its envelopes. These signs are derived from four sources of knowledge, viz., inspection, palpitation, percussion, and auscultation.

Inspection informs us of increase of size of the precordial region: and when the enlargement is considerable, it is always the result of disease. It may also lead us to recognise a greater degree of intensity in the pulsations of the organ, or

even its displacement: thus, the apex naturally beats in the fifth intercostal space, at about two inches from the nipple; but when the left ventricle is hypertrophied, the pulsation is observed to occupy a lower seat. Dr. Saunders considers epigastric retraction after pulsation of the heart as indicative of adhesions between the pericardium and the heart; we do not deny that such may be the case, but we cannot look upon the sign as occurring so constantly as Dr. Saunders is inclined to believe. In pericarditis attended with effusion, the pulsations are said to be perceptible in a higher region than the dullness given by percussion. Ectopia of the heart is also detected by inspection.

Palpation leads us to recognise the intensity of the pulsations; we find them increased in hypertrophy, and diminished in dilatation of the heart. We again find them diminished in syncope, in pericarditis, or when the healthy lung is interposed between the viscus and the thoracic walls. Abundant effusion in the left pleura, or excessive abdominal dropsy, may also occasion displacement of the heart, and cause us not to find its pulsations by palpation. This mode of diagnosis also permits us to ascertain the extent in which the pulsations may be felt, and their frequency, which is always increased in endocarditis, in considerable valvular insufficiency, in nervous disturbances of the heart, in great general debility, and in all cases where the animal heat rises  $99^{\circ}$  Fahrenheit. Palpation tells us, on the contrary, that the beats are less frequent in some forms of hypertrophy, in cerebral disease, in certain intoxications, (for instance, after the exhibition of digitalis.) This subject we will refer to more at large, when we treat of "the pulse." Changes in the order of succession, of the contradictions of the heart, may also be known by palpation, as well as displacement of the viscus, by hydrothorax, pleurisy, or ascites. One of the signs furnished by palpation of the region of the heart, is of the greatest value in the diagnosis of organic disease; it is that which has received the name of "purring tremor," and which always indicates considerable friction within the heart, and almost invariably denotes valvular disease. Hope, Dr. Stokes, and Professor Bouillaud have also met with purring tremor in pericarditis. We have not had that good fortune. Laennec, who, during the last years of his life, betrayed a singular tendency to doubt the existence of anatomical alterations in conjunction with the physical signs of disease, admitted that purring tremor might be produced by mere nervous disturbance, this opinion, however, we cannot possibly partake of.

Percussion, introduced into science by Auenbrugger and Corvisart, was, it is singular to say, hardly noticed by them as a means of coming to a correct diagnosis in diseases of the heart. It is chiefly to Professor Piorry, that the credit is due of having shown the important results to be obtained from that method in disorders of the central organ of circulation. In the healthy adult, the precordial region is perfectly dull on percussion, in an extent of two square inches; around this dull region, strong percussion yields also a certain loss of resonance in about one inch and a half in every direction. Near the sternum the dullness is less perfect, and corresponds to the right cavities of the heart; in this region, also, we should add that less resistance is felt by the finger during percussion. The presence of the emphysematous lung between the heart and the thoracic walls diminishes the dullness; but it is increased by effusions in the left pleura, by indurations of the lung, and by tumours of the mediastinum, such as cancer, abscess, or aortic aneurism; disease of the heart itself, or of its envelopes, also has the same result. Effusion in the pericardium causes dullness in a pyramidal region, with its apex at the upper part of the sternum, and its basis below; this dullness may be displaced in changes of position of the patient, when the effusion is not very considerable. Increase of size of the heart, whatever its cause, also produces augmentation of the space in which dullness exists during health; thus, accumulation of blood in the heart, eccentric hypertrophy (dilatation), produce increased dullness. In enlargement of the left cavities, the dullness is chiefly found towards the fifth, sixth, seventh, or eighth ribs; and when the right side of the heart is hypertrophied, it is towards the inferior part of the sternum, that the maximum of dullness is observed. As to the delineation by percussion of the various cavities of the heart, Professor Piorry asserts that it may be obtained by plessimetry; but further researches are necessary in order to satisfy us upon this point.

2. *Signs furnished by auscultation of the heart.*—When the heart of a healthy

subject is auscultated, two sounds are heard, separated by an interval of silence. The first sound is more dull and more prolonged than the second; its greatest intensity is found to correspond to the space between the fourth and the fifth rib, a little to the left of the nipple, and somewhat lower. At the same time, the apex of the heart strikes the thoracic walls, and the arterial pulse takes place. Perfect synchronism between the pulsation of the arteries and the first sound of the heart, exists only in the arteries placed in the immediate vicinity of that viscus. The vessels more distant from the centre of circulation are distended by the blood a little later, but at an appreciable interval. The second sound of the heart, clearer and shorter than the first, is most distinctly heard near the insertion of the third rib to the sternum. The interval which separates the first from the second sound is called the short silence, in opposition with the longer silence, which intervenes between the second sound and the first. The first bruit corresponds with the contraction, the second with the dilatation, of the ventricles. We are aware that Dr. Corrigan and Dr. Beau hold a contrary opinion, but the numerous researches of various experimentalists, and our own observation, induce us to adopt the general belief on this subject.

Various theories have been broached, for the purpose of accounting for the production of these sounds. We are of opinion that the sounds are not due to one cause only, but to the combination of several: thus, it is not only to the impulse of the heart, to muscular contraction, to the play of the valves alone, or to friction of the blood against the visceral walls exclusively that these sounds should be ascribed; but we should consider that all these causes have a share, an unequal one it is true, but still all have a share in their production. Thus we would look upon the tension of the auriculo-ventricular valves as the chief cause of the first sound, assisted secondarily by friction of the blood against the aortic walls, and against the basis of the column of blood forced into the arteries; as still more secondary causes of the first sound, we should also mention the muscular contraction of the ventricles, and the impulse of the apex of the heart against the thoracic parietes. As the principal causes of the second sound, we would name the sudden tension of the arterial valves, and the return of the blood upon their superior surface; as secondary causes of its production, the sudden opening of the auriculo-ventricular valves, and the passage of the blood into the ventricular cavities.

In the history of the auscultation of the sounds of the heart, we have to consider their seat, extent, intensity, tone (*timbre*), and also the substitution of morbid to natural sounds.

With regard to their seat, we may say that the various causes which occasion a displacement of the heart itself, also change the seat of the sounds; tumours will, therefore, frequently have this effect—a fact so simple as to require no further demonstration.

The extent in which the sounds of the heart are heard during health may be increased, as in endocarditis, dilatation of the viscus, fever, emotions, and nervous affections, generally, by which the violence of its contractions is augmented. If the heart is supposed to remain healthy, still the extent in which the sounds are heard may be increased by all the causes of condensation of the lungs, acute and chronic pneumonia, consumption, &c., which render the respiratory organs better conductors of sound. On the contrary, that extent will be diminished by atrophy of the heart, concentric hypertrophy of its walls, pulmonary emphysema, &c.

The intensity of the sounds is augmented in eccentric hypertrophy, in neurosis of the heart, rarely in endocarditis. In feverishness the intensity of the sounds and the impulse are not augmented as much as one would, *à priori*, suppose. The sound of the heart can sometimes be heard without immediate application of the ear to the chest, and at very variable distances, from two or three inches, for instance, to two or three feet, as we have ourselves observed. The sound thus heard coincides with the ventricular systole; and we believe the cause of the phenomenon to reside in a great increase of energy of the impulse of the heart against the thoracic walls. Laennec explained it by the presence of gas in the pericardium—a gratuitous hypothesis which we do not feel disposed to adopt. In general debility, in softening or atrophy of the heart, in syncope, we find a diminution of its pulsations. We may also add, that in pericarditis increased dullness



coincides with diminished intensity of pulsation, when effusion has taken place; whereas both the dullness on percussion and the intensity of pulsation are increased in hypertrophy of the organ.

The rhythm, or regular succession of the sounds of the heart, may be modified by disease. Thus, the sounds may be intermittent, and the return of the irregularity very variable, and depend upon agitation, motion, or even digestion. Before the age of sixty we very seldom meet with those intermittencies in the pulsations of the heart, without some organic disorder of that viscous. We meet them, for instance, in valvular diseases, and particularly in those of the auriculo-ventricular orifices, whether permanent or transitory in their nature. They also exist when fibrinous concretions form within the heart, in functional disturbance, and whenever any tendency to augmentation or diminution of the action of the heart is produced. We shall not, therefore, be surprised to find them before syncope, or after the exhibition of digitalis. Recollect, however, as a general remark, for the accuracy of which we pledge ourselves, that simple nervous affections very seldom cause intermittent pulsations. The duration of the sounds, or of the intervening silences, may be increased or shortened. The prolongation of the first bruit is generally connected with hypertrophy of the ventricular walls, particularly when this alteration coincides with arterial stricture. As to the second bruit, it is more common to find it shortened than lengthened by disease.

The sounds of the heart may be modified in number. Thus, of the two, one only may remain. It is then the first which, being prolonged, covers and absorbs the second, as in concentric ventricular hypertrophy. The second sound may also, but more rarely, be so much weakened as not to be perceptible. Instead of two sounds, three may be heard—one dull, and two clear sounds—resembling those produced by a hammer falling heavily once, and reverberating twice again afterwards (Bouillaud). It is, in such cases, the second sound which is repeated, and it is observed in strictures of the auriculo-ventricular orifices. The passage of the blood into the ventricles being slackened, a delay takes place in the fall of the blood backwards upon the arterial valves, and the treble sound alluded to is produced. The repetition of the first, the dull sound of the heart, is less frequent, but is occasionally met with, and forms what Professor Bouillaud calls "*bruit du rappel*," from its resemblance to the drummer's call to arms. Its organic cause has not hitherto been rigorously accounted for. In one case of considerable auricular hypertrophy, M. Charcolay states that he heard immediately before the first bruit a peculiar sharp sound. Instead of two or three bruits, four may be heard; but post-mortem examination has not yet thrown much light upon the mode of production of this rhythmic modification. Finally, we sometimes find, particularly when patients are first submitted to examination, that the sounds of the heart are so tumultuous and irregular that they cannot possibly be analysed. Repose often dispels this first result of emotion, and permits the physician to form a correct diagnosis in cases which, at first, seemed to defy discrimination.

The tone of the sounds of the heart may also be altered by disease. In general hypertrophy of that organ, both sounds are more dull; in ventricular hypertrophy, the first sound only; in auricular hypertrophy, the second is thus modified. When the sounds, on the contrary, are more clear, it is generally the result of a condition opposite to hypertrophy, viz., dilatation. When the valves, particularly the bicuspid, are thickened and rigid from chronic endocarditis, a hard, dry, sharp sound is heard, which M. Bouillaud calls "*parchment sound*" (*bruit parcheminé*). In acute endocarditis, the valves being rather soft and fungous, than hard and rigid, a softer, muffled sound is produced, which the same pathologist names "*hoarse sound*" (*bruit enroué*). Here we also place the study of the metallic sound of the heart. It can be readily imitated by applying the palm of one hand to the ear, and striking the back of that hand with the extremity of the index of the other. This experiment proves evidently that this sound may be the result of concussion; and it is heard in the heart whenever that organ beats with unusual violence. Fear and mental emotion produce palpitation, and may, therefore, occasion the metallic sound. Also in intense fever, when the subject is vigorous, it may be observed. It may also accidentally accompany organic disease of the heart: Laennec believed it to depend upon the presence of air in the pericardium—a supposition which has never been supported by facts. Dr. Dechambre ob-

served it in one case, in which the stomach was distended by an accumulation of fluids and of gas. We consider this to have been, in M. Dechambre's case, a mere coincidence. That most distinguished observer, Dr. Hope, also noticed it under peculiar circumstances. It seemed, in a case which he met with, to be produced by percussion of the apex of the heart against the margin of a rib which projected internally, and ceased when Dr. Hope, by pressing upon the intercostal space, had re-established a level surface, upon which the heart did not meet with any inequalities. This most interesting phenomenon Dr. Hope established as the basis of a general theory of the metallic sound—a theory which we do not adopt. We believe, certainly, with Dr. Hope, that in the case observed, the cause of the bruit was the catching of the heart against the rib, but cannot admit that it is so in all cases. We believe, with Bouillaud, Barth and Roger, Beau, &c., that the metallic sound is produced by the violence of the percussion of the heart against the thoracic walls.

The morbid sounds heard in the precordial region may be generated inside or outside the heart. Those which are produced within its cavity have received different names, according to their more or less close resemblance to other sounds to which our ear is accustomed; hence the denominations of *bruit de soufflet* or *souffle* (bellows-murmur), cooing, whining, rasping, or sawing sounds. The musical or cooing sounds are more marked in the arteries than in the heart, and we will speak of them on a future occasion. When a morbid sound precedes the first bruit of the heart, it is called *præsystolic*; when it coincides with the first bruit, it is a *systolic* sound. If the abnormal sound accompanies the second bruit, it is named *diastolic*. Diastolic bruits are generally soft; those which precede or accompany ventricular systole are much more frequently rough. In the auscultation of these sounds it is necessary to pay great attention to the extent over which they may be heard, and also to the spot at which they present their greatest loudness; the semeiotic signification of a morbid sound varying considerably, according to the seat of its maximum of intensity. The pathological conditions in which these abnormal sounds are produced are extremely various; thus we find them in four distinct circumstances; in the first place, they are met with whenever alterations existing in the heart interfere with the free passage of the blood from the auricles to the ventricles, or from the latter into the arteries; for instance, strictures of the orifices, valvular lesions, polypous deposits, &c. Secondly, we find morbid sounds when such alterations have occurred within the heart as to permit the return of the blood from the arteries into the ventricles, or from the latter into the auricles; this insufficiency may be produced by various valvular alterations, or by simple enlargement of the orifices consequent upon dilatation of the heart. Thirdly, morbid sounds are formed when an accidental communication takes place between the right and left cavities of the heart. Fourthly, when the heart is lacerated without complete rupture of its walls, and infiltration of blood takes place into its substance. It has been said that in simple hypertrophy, morbid sounds may be produced. We believe that in general it is not so; although it is not impossible that by hypertrophy a change may occur in the relative dimensions of the cavities and of the orifices of the heart. Morbid sounds generated within the organ may be produced also by pericarditis, but usually, the abnormal bruits characteristic of this inflammation are formed outside the viscus.

The heart remaining healthy, morbid sounds may also be produced. Thus, when the blood has been impoverished, a *souffle* is heard. When, for instance, the amount of the globules of the blood descends below  $\frac{1}{3}$  of the normal amount, *souffle* is always produced in some part of the circulating organs; always in the arteries, often in the heart. In plethora we do not find any change in the sounds. It is incorrect to say that febrile excitement causes murmurs in the heart; this occurs only when some complication is present. In ague, when the prolongation of the disease has brought on anemia, we may hear *souffle*, but it is the anemia, not the fever, which produces it. Laennec believed that certain morbid conditions of the nervous system might occasion in the heart a bellows murmur. We deny it altogether, and assert that hysteria and hypochondriasis present this symptom only when accompanied by anemia. In a certain number of pregnant women, one of the effects of pregnancy is to diminish the globules of the blood, and, therefore, in some instances, we will not be surprised to hear a *souffle* in the heart.

With these data we can now convert these morbid sounds into signs of disease; and from their varieties of nature, of tone, and of seat, ascertain the morbid state which occasions them.

In the first place, let us first point out their signification in alterations of the heart. We have said that they might be produced by an obstacle to the free passage of the blood from the auricular into the ventricular cavities. This should chiefly be applied to the left cavities, the right side being very rarely diseased.—Laennec had established as a law, that a soufflé at the second beat of the heart was characteristic of auriculo-ventricular stricture. This *à priori* assertion, supported by no cases, was, however, for many years blindly adopted, when Dr. Corrigan showed that insufficiency of the aortic valves was also productive of a soufflé accompanying the second bruit. Researches were instituted for the purpose of discriminating these two morbid states from each other, and Laennec's opinion began to be doubted when it was found that it was purely theoretical, and not derived from observation. One case only is in existence, of a soufflé having been heard at the second beat of the heart, in conjunction with auriculo-ventricular stricture; it has been published by Dr. Andry, in his "*Manuel d'Auscultation*;" but this case is a solitary one, and cannot be considered as a rule. From the interesting researches of Dr. Fauvel, we must conclude that, when the auriculo-ventricular orifice is strictured, a præ systolic bruit is heard, often beginning before the first sound, and finishing with or a little before it. This morbid sound has its greatest intensity towards the apex of the heart, and more or less to the left. We should not forget that some strictures of this same orifice cause no soufflé, and that in these cases the diagnosis must be derived from other sources.

When an obstacle exists to the passage of the blood from the ventricular cavities into the arteries—when, in other words, the arterial orifice is strictured—Laennec correctly asserts that a soufflé is heard accompanying the first sound of the heart. This sound has its greatest intensity at the basis. It is heard almost exclusively in rheumatic endocarditis—a circumstance which shows that a feeble obstacle generates a morbid sound more readily in the arterial than in the other orifices.—When the abnormal murmur is prolonged beyond the first bruit, and occupies also the short silence, or even anticipates slightly over the second bruit, we should conclude that a considerable difficulty exists to the passage of the blood into the aorta.

Morbid sounds accompanying the second bruit of the heart are connected with the reflux of the blood into cavities which it had abandoned; or, in other words, with insufficiency of the valves to close their orifices. This is certain, at least, for the aorta; but the diagnosis of auriculo-ventricular insufficiency is not so far advanced. The general opinion, it is true, is that this disease is productive of a soufflé at the first beat of the heart; but it is a question which has not received a definitive solution. The insufficiency of aortic valves may be congenital, or result from perforation, laceration, adhesion, &c.: further, they may be unaltered, and still be insufficient, the aorta having undergone more or less dilatation. In all these various states the second sound of the heart is replaced by a constantly soft bellows-murmur, the greatest intensity of which is at the basis of the organ. In false aneurism of the heart, when accidental cavities form in its walls, a soufflé is also heard, and generally at the second bruit. With regard to the communication of the right cavities with the left, a soufflé is produced, but its diagnostic value is not hitherto well established. If a soufflé was ever produced in simple ventricular hypertrophy, it would be heard at the first beat of the heart.

Dr. Aran states that, when the second sound of the heart altogether disappears, it is characteristic of adhesions of the pericardium to the viscus. We do not pledge ourselves for the accuracy of this sign.

The soufflé of anemia has special characters, which we will now enumerate: its tone is constantly very soft: it is always a systolic sound, heard most distinctly at the basis of the heart, and invariably coincides with vascular murmurs.

Disease of the pericardium occasions morbid sounds. They are caused by the friction of the serous surfaces, rendered more or less rough by the presence of false membranes, or other deposits. They vary from the softest friction to a creaking sound, analogous to that produced by new leather. They may accompany one or the other, or both sounds of the heart, and can readily be distinguished



from sounds due to friction in the pleura; the latter accompanying the respiratory movements, and not the contractions of the heart. They may be continuous or intermittent, according to their cause; but they are always superficial. On listening with attention, a gurgling sound has sometimes been detected; its origin is in the stomach, not in the pericardium. In one curious case, observed at the Hôpital Necker by Drs. Brichteau and Beau, a gurgling was heard in the precordial region, which those experienced observers compared to the sound produced by the rapid motion of paddles in water. On post-mortem examination, fluids mixed with gas, were found in the pericardium, no signs of putrefaction being present at the time. This solitary case is sufficient to prove the mere possibility of such an occurrence, but it is, we repeat, extremely rare.

3. *Signs furnished by disturbance of the arterial circulation.*—These symptoms may be recognised by inspection, palpation, or auscultation.

Inspection informs us of the increased energy of arterial pulsation. In valvular insufficiency this increased energy is very remarkable, and often assists materially the diagnosis. We also find in cerebral congestion that the pulsations of the carotid and temporal arteries can be recognised by inspection. Aneurisms and erectile tumours present the same sign. In hypochondriasis and hysteria the aortic pulsations may sometimes be seen in the epigastric region—a singular and hitherto unexplained symptom. Patients occasionally feel the arterial throbbing; hypochondriacs, for instance, and persons affected with cerebral congestion, acute gastritis, or phlegmonous inflammation.

By palpation we recognise the frequency, strength, and rhythm of the pulse.

Some physiological circumstances cause the pulse to vary in frequency,—age, for instance. Drs. Jacquemier and Lediberder state, that shortly before birth the pulsations of the fœtus in utero vary between 108 and 160; during the first four minutes of life they descend to 72—94, and rise in the course of the first day to 96—154. Sæmmering asserts that the average of the pulse during the first year is 135; during the second; 110 during the third; 100 during the following years, and 80 at puberty. Gorham gives 123 as the average pulse of children one day old, and 128 during the first week. M. Valleix says that between the second and the twenty-first day the average of the pulse is 90. M. Trousseau, during the first two months of life, considers 137 as the standard of the pulse; from the second to the sixth month, 128; and 120 during the second half of the first year; from one year to eighteen months, 118. The pulse varies at all times of life during sleep. In thirty children, aged from fifteen days to six months, Professor Trousseau found the average of the pulse, awake, 140, and asleep, 121; in twenty-nine children, aged from six to twenty-one months, when awake, 128, and when asleep, 112. The pulse of the child becomes in disease much more frequent than that of the adult, and tends to remain so during convalescence—an important fact which should not be lost sight of. In the adult the average of the arterial pulse is 60—70. But great individual differences are observed; it is rare, however, to find the pulse descend below 50. Napoleon is said to have had only 40 pulsations in one minute. Below this number we believe that a pathological cause may always be found to exist, and to account for the extraordinary slowness of pulsation. In some persons the pulse is naturally quick, 80—90, and even 100. The researches of Drs. Leuret and Mitivié, at the Asylum of La Salpêtrière, show that in the aged the frequency of the pulse increases. At twenty-one years of age the average of the pulse is 65; at seventy-one it is at 74. The pulse of women is more frequent and more changeable than that of men, and, like children, women often preserve a quick pulse during convalescence.

In disease we find sometimes 200 pulsations in one minute; beyond this it is difficult, if not impossible, to count the pulse with any degree of accuracy. The increase of frequency of the pulse is the rule in fever, although some exceptional cases are said to exist in which the pulse remains low, but animal heat is augmented: we believe these cases refer to persons who, during health, have naturally a very slow pulse. Muscular exertion increases both animal heat and the quickness of the arterial beat; but excitement of the nervous system quickens the pulse without augmenting the animal heat; hence what are called nervous subjects usually have a frequent pulse. Debility and loss of blood generally quicken the pulse. In acute disease increase of frequency of the arterial circulation is

usually an unfavourable circumstance, and when it is consequent upon venesection it shows that depletion was improper. The exhibition of some medicines, digitalis for instance, slackens the pulse; in some cerebral affections it is also slower than during health. Of all the diseases of the heart, that which produces most frequently acceleration of the pulse is, beyond doubt, insufficiency of the aortic valves: and in general, when the pulse is diminished in frequency during organic affections of the heart, it is only diminished in appearance and not in reality, some of the arterial pulsations being merely so weak as to escape detection.

With regard to its strength, the pulse may be soft or hard, strong or weak, high or low, depressible, full, wiry, undulating, or double (*bis feriens*). In simple hypertrophy of the heart, the pulse is hard; it is, on the contrary, remarkably soft in atrophy and in dilatation of the viscus. When the aortic orifice is considerably strictured, the pulse loses its strength: it becomes small and wiry (*serré*) in contractions of the auriculo-ventricular orifice. When the aortic valves are insufficient, the pulse is hard and full, a fact accounted for by the almost invariable coincidence of aortic insufficiency with ventricular hypertrophy. Whenever, therefore, in organic disease of the heart, you find the pulse peculiarly full and strong, direct your attention towards aortic insufficiency, which you will seldom fail to detect.

At the ages of sixty-eight or seventy the pulse generally acquires a considerable degree of hardness, perhaps on account of the tendency at that age to hypertrophy of the heart.

The strength of the pulse is also modified by the condition of the blood. In plethora it is full and strong; in confirmed anemia usually weak, on account of the smallness of the column of blood propelled into the arteries, and of the diminished energy of the contractions of the heart. We cannot admit with Dr. Beau that in advanced anemia the pulse is full. We conceive that opinion to have been brought forward by that observer as a theoretical consequence of another view of his—which we do not adopt—viz., the increase of volume of the mass of blood from the augmentation of its watery element.

Hemorrhages are often preceded by that state described in the first series of these lectures under the name of *molimen hæmorrhagicum*. Besides this general disturbance, the pulse acquires an undulating character. After hemorrhage the pulse is depressed and low, in proportion to its abundance.

It is important to distinguish between two varieties of small pulse, each indicative of a different condition of the system: in one vital power is really depressed, in the other it is concentrated. The pulse of peritonitis and the pulse of advanced fever are both small; but the former is hard, the latter compressible; the former becomes fuller and stronger by depletion, the latter would by venesection be brought still to a lower state. In marked feverishness the pulse becomes full and tense, particularly on the approach of perspiration. It is not explained why in typhoid fever the pulse is so often double (*bis feriens*).<sup>\*</sup> The pulse of internal inflammations is not by any means always the same; compare in this respect the pulse in peritonitis and pneumonia. When the nervous system is deeply affected, the heart is not solicited to powerful action, and the pulse becomes small and sometimes very difficult to feel, as in the pains of painter's colic, of hepatic and nephritic colic, &c.

If we consider the rhythm of the pulse, it may be regular, unequal, irregular, or intermitting. The inequality of the pulse refers more to its strength, and the irregularity to the succession of its beats.

Great nervous disturbances may render the pulse irregular and intermittent; in meningitis, particularly of childhood, after the exhibition of digitalis, before syncope, in confirmed debility, after abundant alvine discharges, this is frequently observed. In acute diseases irregularity of the pulse is uncommon, except when they draw rapidly towards a fatal termination.

Constant and persisting irregularity of the pulse indicates almost always disease of the heart. In hypertrophy of the heart, and in valvular insufficiency, the pulse is seldom irregular; but in strictures of the orifices, on the contrary, we often meet

\* [We regard it as produced by a double effort on the part of the heart to expel the quantity of blood, which ordinarily requires but one stroke; it is a sign of debility, and in typhoid fever affords strong indication for the use of wine.—ED.]

with this symptom, and mostly in strictures of the left auriculo-ventricular passage. The souffle may be absent, but the irregularity of the pulse is quite as important. The aortic orifice, on the contrary, when strictured, more constantly is accompanied with souffle, and less often with irregularity of pulse.

It is frequent after the age of sixty to find the pulse intermittent, no other symptom of disease being present; this almost always indicates incipient alteration of the bicuspid valves. Repose and venesection remove this sign, but aggravate it if improperly repeated. When organic disease of the heart causes these intermissions of the pulse, it is not very unusual to see them suppressed by accidental feverishness, by which the heart is stimulated to increased exertion. Some patients are conscious of these irregularities, from a peculiar sensation experienced in the region of the heart. Not to forget anything, let us also add, that when the principal artery of a limb is obliterated, its pulsations cease to be felt. Corvisart stated that some organic diseases of the heart, passive aneurism (dilatation), for instance, might occasion gangrene of the skin of the lower extremities, or even of other parts of the cutaneous surface. No case had, however, been brought forward in support of this opinion; but in July, 1847, an interesting case appeared in the "*Gazette Médicale*" of Paris, observed by Prof. Forget, of Strassbourg; it was one of very considerable stricture of the left auriculo-ventricular orifice; the aortic passage being healthy; the pulsation of the radial artery was unequal and intermittent; none was discernible in the femoral arteries. Mortification showed itself on the feet and legs, and on dissection the iliac and femoral arteries were found obliterated by ancient clots of blood, the vascular walls having remained perfectly unaltered.

4. *Signs derived from investigations of the venous circulation.*—We cannot think of separating the history of the signs furnished by auscultation of the veins, from those yielded by the application of the same method to the arteries. During health no sound is produced by the passage of blood through the veins. In some diseases, on the contrary, we hear a continuous murmur due to this cause. This sound varies considerably in intensity, and may be either simply continuous, or present periodical risings, which indicate the presence at the same time of souffle in the artery and in the vein: it is then called *souffle à double courant*, or *bruit de diable*. In this case, if by pressing upon the vein you arrest the continuous murmur, the intermittent arterial bruit will still be heard, and the nature of the double sound will thus be explained. A sort of cooing is also sometimes detected in the veins, or a buzzing sound; sometimes the bruit is analogous to that which is observed when the ear is brought into close apposition with a large conch or shell; a musical sound is also more frequent in the veins than in the arteries. The continuous venous murmur can be heard only in the neck, in the space circumscribed by the trapezius, scaleni, and sterno-cleido-mastoid muscles, and in the course of the internal jugular vein. When the souffle is heard in the jugular veins, pressure exercised upon these vessels, above the stethoscope, instantly arrests the murmur. This sound is more frequent and more strong on the right than on the left side of the neck. If the larynx be gently pushed away while the veins are examined, the bruit will often be found to lose some of its intensity—a fact which M. Donné explains by supposing that the larynx acts as a kind of sounding-board. During effort the souffle ceases; it is stronger during inspiration than expiration, and is more distinct when the patient stands or sits, than in the reclining attitude; if the head be lower than the body, the murmur often ceases; it is increased by exercise, and diminished by the causes which retard the circulation of the blood in the veins: thus the application of the cupping-boots, invented by Dr. Junod, diminishes its force. Venous murmurs are heard only in one condition of the system, viz. anemia. They are constant when the globules of the blood descend below  $\frac{1}{1000}$ , and never exist when they average above  $\frac{1}{1000}$ . In the anemia consequent upon saturnine intoxication, profuse hemorrhage, or convalescence, they may also be detected. When the fibrine or albumen of the blood only has decreased, we find no morbid sounds in the veins; in simple neurosis we do not meet with them, but we find them when neurosis is complicated, as it often is with anemia.

For the purpose of explaining these vascular murmurs, various experiments have been instituted. Thus fluids of different density have been propelled through elastic tubes, and on applying the stethoscope, no sounds were heard when the



density of the injected fluid was considerable, whilst a souffle, more or less distinct, according to the speed of the motion, was distinguished when the density of the fluid diminished. These experiments, which have now been frequently repeated, do not explain the reason of the production of souffle, they merely demonstrate a fact; we must leave the solution of the problem to the further researches of natural philosophers.\*

Inspection of the veins informs us also of some signs of disease. In effort, and when from any cause the circulation of the heart is embarrassed, the jugular veins become distended. In diseases of the heart, or when the pulmonary functions are much disturbed, a reflux of the blood into the veins of the neck is sometimes observed. M. Martin Solon noticed this sign in animals, in the veins of the superior extremity, and also in the abdomen, where the circulation was much impeded. Swelling of the veins may result from the pressure of a neighbouring tumour. Distension of the veins of the thoracic walls points to an obstacle to the circulation of the blood in the *v. cava descendens*, either from the presence of a tumour (usually cancer) in the mediastinum, or from aneurism of the aorta. Very lately, Dr. Grisolle met with a case of obliteration of the *v. cava descendens* from circumscribed phlebitis, accompanied by distension of the veins of the thoracic walls. The veins of the abdominal parietes may also acquire considerable size. In simple ascites, produced by cirrhosis, or chronic peritonitis, they are seldom much developed; but when they become greatly distended, chiefly on the right side, you may depend upon finding a tumour pressing upon the *vena cava ascendens*, or the *v. portarum*.

5. *Signs derived from the investigation of the capillaries.*—The state of plenitude, or of vacuity, of the capillary vessels is betrayed by the appearance of the skin, which also permits us to judge of the increase and diminution of the globules of the blood. In chlorosis the skin acquires a greenish tinge, and the visible mucous membranes, the inner face of the lids, the lips, gums, and tongue are remarkably pale. In pulmonary consumption the face becomes very pale, and the red patch, so often noticed on the cheeks, is the result of feverishness. Albuminuria, or Bright's kidney, causes a particular paleness of the countenance, which is at the same time more or less puffed. Organic diseases of the heart cause frequently an œdematous appearance of the face, but at the same time a certain degree of cyanosis. The face is considerably discoloured in chronic gastritis, but is extremely thin. Plethora produces an unusual redness of the skin. Whenever the blood is not properly influenced by the oxygen of the air, whatever may be the cause, the skin acquires a dark, bluish tinge, of a very characteristic nature. We find this colour in diseases of the heart, on communication of the right with the left cavities; and also whenever the venous circulation is greatly embarrassed. We likewise observe it in pulmonary emphysema, and in the second stage of Asiatic cholera. It is, of course, to be met with in true asphyxia, caused by submersion, strangulation, &c., and in those various forms of intoxication which interfere with a proper oxidation of the blood.

In cancerous diseases, particularly in cerebriiform cancer, and when the morbid product betrays a tendency to be developed in several parts of the body, a special straw-coloured hue invades the skin, and is too different from the chlorotic tinge to be ascribed to a similar cause.

In various great classes of diseases clinical medicine will point out special colorations of the skin. We need only name its yellow aspect in jaundice, and its earthy hue in intermittent fever. Clinically speaking, attention to this point may often be useful. For instance, in the advanced periods of typhoid fever the appearance and colour of the face are quite characteristic; further, in delirium, a valuable sign is furnished by the inspection of the conjunctiva: it is injected in meningitis, and pale in typhoid fever. After the prolonged exhibition of nitrate of silver, an indelible bronze colour shows itself upon the skin—a fact which constituted a strong objection to the alleged periodical renovation of our tissues.

6. *Signs derived from examination of the spleen.*—The spleen is an appendix of the circulation, which will now occupy our attention. This viscus is subject to very rapid variations of size—a fact frequently observed in the early stages of diseased

\* Vide Report.

heart. Palpation of the left hypochondrium permits us occasionally to feel the protrusion of the enlarged spleen; but percussion is much more useful than palpation for the purpose of ascertaining its dimensions; and much gratitude is due to Professor Piörny for his able researches on this subject. Percussion shows that, when the spleen does not descend below the margin of the ribs, it still may be much enlarged. We should further be aware that the development of gas in the colon or stomach may conceal a part of the extent of the viscus. Increase of size of the spleen is seldom an idiopathic disorder; cancer of that organ is not in general a primary alteration, but appears only long after other parts have been similarly diseased. Hydatids have been met with in the spleen, and also abscesses. Enlargement of the spleen is, therefore, usually one of the symptoms of another disease. It is found in intermittent fever. Observation teaches us that, when the patients are observed in the incipient stage of the malady, the spleen often does not appear increased in size, but that this alteration occurs if the disease be prolonged. After repeated attacks of intermittent fever, the spleen may remain permanently enlarged, and on dissection it is found indurated, and resembling in colour and density a piece of ham. After pernicious intermittent fever the spleen is found in a state of enlargement, accompanied with softening.

In continuous fever the spleen may also increase in size. This is very common in typhoid fever, and coincides with softening of the organ. This is what observation teaches; but when we attempt to explain the coincidence of enlargement of the spleen with ague or fever, we are compelled to acknowledge our ignorance. It is certainly not due only to the presence of febrile excitement; for how many febrile diseases could we mention which are unattended with hypertrophy of the spleen—pneumonia, pleurisy, rheumatism, consumption, &c. In general, we may say that, when chemical analysis shows an increase of fibrine in the blood, the spleen is not enlarged; but when, on the contrary, the fibrine decreases, or tends to decrease, the volume of the spleen is usually augmented—e. g. typhus, plague, yellow fever, and scorbutic disease.

In organic affections of the heart the spleen at first rapidly swells, or diminishes, under the influence of various causes; but at a later period, when the patient dies from the progress of the malady, the spleen is found small and indurated.

We have now examined the signs furnished by the heart, the vessels, and the spleen, and we should inquire into those yielded by the state of the blood contained in their cavities, had we not, during the last session, devoted several lectures of the first series of this course to that important subject. To those lectures we must refer you, in order to avoid repetition and loss of time.

The alterations of the lymphatic glands are generally signs, and seldom idiopathic diseases. In principle we may state that, when a mucous or cutaneous surface becomes diseased, the neighbouring lymphatic glands, traversed by the lymphatic vessels which originate in the unhealthy portion of skin, are swollen and inflamed; but the lymphatic glands being primarily affected, may still betray a general disease, and are a sign of scrofula.

#### ART. 27.—*The Physical Diagnosis of Aneurism of the Thoracic Aorta.*

By DR. RAY CHARLES GOLDING.

(*Medical Gazette*, Feb. 4 and 11, 1847.)

The aids to the physical diagnosis of thoracic aneurism recognised by the author are comprised under the following heads:—1. Abnormal pulsation. 2. Dullness on percussion. 3. Alteration in the sounds of the heart. 4. Alterations in the position of the thoracic viscera. 5. Changes in the characters of the respiration and vocal resonance. 6. Changes in the abdominal viscera, and in arterial and venous circulation of the head, neck, and superior extremities.

1. *Abnormal pulsation.*—Under ordinary circumstances, Dr. Golding observes that the pulsation of the heart is not perceptible higher than the third intercostal space; but during hurried breathing, or temporary excitement of the circulation, the boundary may be extended to the second intercostal space, even in the healthy heart. If the pulsation, however, is evident in the hollow of the neck, above the sternum, it is usually due to one of the following causes: tumours pressing on the

large vessels, and receiving impulse from them; an anemic state of the system; and, thirdly, aneurism or preternatural dilatation of the vessels of the heart itself.

The tumours which give rise to pulsations in this situation are usually cancerous, or tubercular degenerations of the lungs, bronchial and mediastinal glands. In chlorosis the pulsation is due to increased irritability of the heart, together with an impoverished condition of the blood. The pulsation of aneurism is progressive, often perceptible over the whole chest, in the epigastric region, and down the back. It is often disproportionate to the heart's impulse, and is not materially influenced by moderate exercise; in which respect it differs from chlorotic pulsation.

In aneurism of the arch of the aorta, the first visible indication of its existence may be a pulsation in the hollow of the neck, above the sternum; in aneurism of the descending portion the pulsation is greatest in the back. In true aneurism, the pulsation is more uniform than in the false. Thus to recapitulate, aneurismal pulsation is progressive; is appreciable in regions in which healthy pulsation is inappreciable; is more intense than that produced by tumours deriving their pulsation from the heart or large vessels; and is not materially increased by the trivial causes which augment the pulsation in anæmia and chlorosis.

2. *Dullness on percussion*.—In a healthy adult, the natural limits of dullness on percussion over the pericardial region are stated to be, during ordinary respiration, a space of two inches square; after a forced expiration, a space three inches square. After a forced inspiration the space rendered dull by a forced expiration becomes more or less resonant. At the upper part of the sternum, a little to its left, there is slight dullness after expiration.

In aneurism of the arch of the aorta the dullness is at first under the upper part of the sternum, but well defined only after expiration. In aneurism of the descending aorta, dullness is not easily defined.

Dullness on percussion, attended with abnormal pulsation, exists only under two circumstances—in aneurism, and where tumours derive a pulsation from their adjacency to a large vessel. Pulsating tumours, not aneurismal, are distinguished from aneurism by two signs: 1st, by the feebleness of their pulsation, compared with an aneurism of the same size; 2d, according to Dr. Stokes, by the pulsation following the stroke of the ventricle, the pulsation of aneurism being synchronous with it.

3. *Alterations in the sounds of the heart*.—*Purring tremor*.—Although, in some instances, the pulsation of aneurism with concomitant bellows-sound may be audible over the greater part of the chest, yet the sounds of the heart itself are seldom audible beyond the precordial region, or, if so, it is the first sound alone that is so perceived.

In false aneurism, the first sound is heard over the whole tumour, unless its size be excessive. In true aneurism, the first sound is heard, though feebly, over the tumour, as is also the second, but in most instances more distinctly than the first sound.

The second sound is muffled in false aneurisms of large size, as well from the amount of concentric lamellæ of fibrin in the sac, and the adhesion of surrounding textures to it, as from the loudness of the systolic bruit accompanying it. The thinner the sac, the more probability of hearing the second sound; so that, if no bruit exists, as in true aneurism, there is no physical reason why the second sound should not be heard.

In false aneurism, on the contrary, where a bellows-murmur exists, whatever increases the force and frequency of the heart's action, develops the attendant bruit in greater intensity; so that the second sound is rarely audible, except over the aortic valves themselves. If there is valvular disease of the heart, or structural changes in the portion of the artery adjacent to the aneurism, the sounds of the heart will be obscured by the morbid sounds elicited under such circumstances, independently of the structure of the aneurismal sac.

The morbid sounds [?] attending false aneurism are two—the bellows-murmur, and the purring tremor; the former is readily distinguished by auscultation, the latter by manipulation of the cardiac region. [Surely a phenomenon which is only recognized by the *touch* should not be called a *sound*.—Ed.] The bellows-murmur varies in intensity and intonation, according to the degree of rigidity of the artery. It may be either single or double.



[We need not follow the author in his explanation of the mechanism of the systolic murmur, or in his remarks as to the possibility of its occurrence independently of aneurism. These facts are familiar to the least advanced of our readers.]

In aneurism of the arch of the aorta, the bruit is first heard under the sternum, and in the hollow of the neck; next, on one or both sides of that bone, to a variable extent; and, lastly, over the entire chest. It is heard with the greatest intensity along the blood-vessels from the base of the heart,\* being less distinct as we approach the apex; in which it differs from the bruit arising from diseases of the mitral valve. In aneurism of the dorsal portion of the aorta, the murmur is heard best between the scapulæ.

The purring tremor depends upon abnormal vibration of the thoracic walls. It is indicative of false aneurism, when accompanied by inordinate pulsation, by dullness on percussion, and a rough systolic murmur. It is not constantly present in true aneurism.

To recapitulate: In true aneurism there is usually no bellows-murmur, no inaudibility of either sound of the heart, nor purring tremor. In false aneurism, a systolic murmur usually exists, accompanied or not by a diastolic one, and not unfrequently with a purring tremor. The second sound of the heart is seldom audible over the sac.

4. *Alterations in the situation of adjacent parts.*—In true aneurism, the parts around the sac adapt themselves to the gradual expansion; in true aneurism, also, adhesions seldom form between the tumour and surrounding soft parts; nor is there any injurious pressure upon them, as in false aneurism, so long as the costal cartilages yield to the pressure.

In false aneurism, from the unyielding character of the sac, the adhesions formed between it and surrounding structures—lesions of the lungs and pleuræ; dropsy from pressure on the veins; general emaciation from obstruction to the passage of the chyle into the veins; asthmatic paroxysms, from irritation of the phrenic pneumogastric and sympathetic nerves; paralysis and violent reflex movements, from implication of the spinal marrow and cord; dyspnœa, dysphagia, chronic vomiting, with pains in the brachial plexus of nerves—are its most usual concomitants. In true aneurism, on the contrary, these distressing symptoms are commonly absent, or are never so distressing; the utmost being erratic pains in the arms and neck. The difference is explained by the yielding of the true aneurism as compared with the false.

The changes in the form of the chest are referable to the following causes: in false aneurism, to the pressure of the tumour on one or other side of the sternum, or directly in its centre; to adhesion of the sac with other structures; and to pulmonary consolidation, or effusion into the pleura and pericardium. In true aneurism, these effects are not produced to the same extent, and, being gradually produced, do not occasion so much functional disturbance.

5. *Changes in the characters of the respiration and voice.*—In true aneurism, the breathing may be unaffected throughout. In the false aneurism there is usually some alteration in the respiratory sounds from the commencement. The signs are referable to the larynx, trachea, and larger bronchi and substances of the lungs.

a. The larynx may be affected with spasm, when the breathing will be sibilant, the percussion-sound and expansion of the chest remaining normal. From pressure on the larynx, the stridulous breathing becomes permanent. From inflammation and consequent thickening of the mucous membrane, râles, sibilous or mucous, arise, according to the amount of secretion.

b. Pressure on a bronchus induces feeble respiration in the corresponding lung, with puerile respiration in the other.

c. The signs referable to the lungs arise from the greater or less condensation of the pulmonary tissue, from pressure, inflammation, or degeneration.

d. The signs referable to the pleura consist of those which indicate serous effusion.

6. *Changes in the abdominal viscera, and general circulation.*—The liver or spleen may be hypertrophied from pressure of an aneurism on the inferior cava, and may be displaced by the mechanical effect of effusion into the pleuræ. Irritation of the phrenic nerve causes hiccough and dyspnœa.

The circulation in the head and upper extremities is more deranged in false than in true anæmism. The superficial veins become varicose; there is œdema of the face and neck, which arises from pressure on the veins.

ART. 28.—*On Pericarditis Scorbatica, and its Treatment by Paracentesis.*  
By Dr. KYBER.

(*Oest. Med. Wochenschr.*, and *Monthly Journal*.)

The disease here described is found on the extreme northern coasts of Europe, where scurvy reigns endemically from spring to autumn, and affects almost exclusively the class of sailors, who are, of course, peculiarly exposed to all the causes of the scorbutic diathesis. This form of pericarditis appears to have been described by Cælius Aurelianus under the name of *morbus cardiacus*; but in more modern times has fallen into neglect, partly from the remoteness of the regions in which it prevails, and partly on account of the obscurity of the symptoms, and the deficiency of pathological observations. Dr. Kyber considers it as a very different disease, in its course and phenomena, from ordinary pericarditis. He thinks that its causes are the same as the scurvy, to which it is so closely allied; and remarks that the extent of its epidemic prevalence in a given year is always proportionate to the violence of scurvy in the same year. It seldom appears before February, attains its height about April, declines in summer, and disappears during autumn. It chiefly affects men from twenty-five to forty-two years of age; it has not been observed in women. A fourth of those affected are Russians, and three-fourths are Lettons (Lithuanians, &c.) and Estonians, men mostly of a relaxed habit, and prone to hypochondriac and nostalgic affections. The external signs of scurvy are not always visible. In fatal cases the pericardium is found enormously distended, often measuring a foot in length, and containing three to eight, or even ten pounds, of dark red, or blackish opaque fluid, composed of serum and fibrin, with blood-corpuscles angular, and otherwise altered in form. The inner surface of the pericardium is covered with a coat of lymph, which is easily torn, reticulated on the free surface, of the colour of cinnamon. It can often be removed in layers, of which the palest and firmest are those attached directly to the membrane. The membrane itself is either injected, or stained with dark-coloured sugillations. On the part covering the heart, the lymph is often irregularly disposed in shreds, having a rugged or honeycomb appearance, and composed of bright red or yellow granules. The heart is diminished in size, and its substance is pale, flaccid, and easily torn. In cases where the fluid has been absorbed, adhesions are found between the layers of the pericardium. A similar exudation to that above described is frequently found in the pleura or peritoneum. The left lung is frequently much compressed by the distended pericardium, the right gorged with blood, or even inflamed.

The author describes the symptoms of this affection as occurring under two forms, acute and chronic; of which the former is commonly primary, the latter supervening secondarily on a catarrhal or rheumatic affection. The acute form begins with a sensation of coldness and prostration, oppression alternating with pain in the chest and epigastrium, rapid painless breathing, and decubitus on the left side; to these follows a discontented, gloomy condition, or complete apathy; with a pulse small, intermitting, or, when the effused fluid reaches two or three pounds, inappreciable. When the quantity of fluid is very large, the extremities are cold, the pupils dilated, the jugular veins distended, the expression exceedingly anxious; consciousness remains unaffected. The sound on percussion may be dull on the left front up to the clavicle; the heart's sounds distinct or inaudible, if the fluid be large in amount; if this be small, there may be friction-sound. The left side of the thorax is distended, and does not move freely; the lung on this side does not act; the right side, on the contrary, has puerile respiration. The epigastrium is protruded, and sensitive on pressure. In the acute form these symptoms may be developed in twelve hours; in the chronic the progress is longer, the danger to life less immediate; but the retrograde process of the disease, in case of amendment, is also much slower, and less satisfactory in its results.

In the treatment of this formidable affection, most of the remedies for ordinary

pericarditis are either inapplicable from the cachectic constitution of the patients, or, if applied, fail to accomplish any good purpose. The apparent certainty of a fatal issue in such cases induced the author to afford a chance of prolonged existence by paracentesis of the pericardium. This operation, however, he has not yet attempted, except in cases where death seemed impending, and where the fatal issue could only be postponed by a bold measure of immediate relief.

The operation performed by the author consists in the insertion of Schuh's trocar between the fourth and fifth ribs of the left side, close to the sternum, and passing it a little obliquely outwards, till the point is felt to enter the pericardium. The trocar is then withdrawn, and the fluid allowed to flow through the canula, which is apt to become blocked up by lymph, and in this case must be kept clear by a stilet, or probe. By this method both the pleura and the internal mammary artery are avoided. The operation is painless, except where it is necessary to remove, by the adaptation of a syringe, either fluid or air which has entered into the cavity. The immediate effects of it are, return of the pulse, removal of the anxiety and dyspnœa, and renewed animal heat, with comfort and cheerfulness of mind; at the same time the friction-sounds return, and the heart's sounds also become again appreciable. In the greater number of cases, life is merely protracted, as the fluid is again effused in a few weeks in as large a quantity as before, and becomes fatal. Nevertheless, in four cases the author has succeeded in accomplishing a radical cure. In three of these he administered, after the operation, the sulphate of quinine, which he recommends to be used in doses of six to fifteen grains every two or three hours, with the object of affecting favourably the capillary system, and preventing the renewed effusion of serum. The dissection of patients who, after an attack of this disease, have died of some other affection, show that when a radical cure takes place, it is through adhesion of the pericardial surfaces, which occurrence the author believes, however, to be much rarer in this than in other forms of pericarditis. He thinks that stimulating injections might possibly conduce to this favourable result, especially as it has appeared to him that the entrance of a certain quantity of air is productive of no bad result, but even seems to stimulate the membrane to a healing action.

In the four cases which were cured by paracentesis, the operation was only once performed. It was repeated (after the lapse of seventeen days) in one case only, and in this the result was unfavourable. He seems to think that if it were performed at an earlier period, it might be more frequently and permanently successful; but he has not thought himself justified in attempting this, having only operated in cases altogether desperate.

[The same disease has been described by Dr. Seidlitz, of St. Petersburg, under the title of Hemorrhagic Pericarditis. Vide Forbes's Brit. and For. Med. Rev., vol. i, p. 262.]

## SECT. V.—DISEASES OF THE CHYLOPOIETIC SYSTEM.

ART. 29.—*Extract from Professor Andral's Lectures on General Pathology.—Semeiotics of the Digestive System.*

(*Medical Times.*)

1. *Signs furnished by the tongue.*—From the modifications brought on by disease in the circulation of the tongue, arise various changes of colour; for instance, a redness, which may be general or limited to the edges, apex, or centre of the organ; it may occupy only the papillæ, and at the same time its surface may be either dry or moist. The surface of the tongue may be smooth, as after desquamation of the epithelium; together with a change of colour, an alteration of size is sometimes observed; diminution, for instance, with redness, is indicative of disease of the stomach. The heat of the tongue may be increased, or may fall below its average standard; and in this latter case the organ acquires a purple hue, as in asphyxia and the blue period of cholera. Blood may also be extravasated on the tongue, and, drying up, leaves a black, fuliginous deposit on its surface. In chlorosis, on the contrary, the part is paler than during health.



The secretions of the tongue may also be altered from the effects of illness. We find it sometimes dry, at others more humid than usual, and occasionally viscid. Universal dryness of the cavity is also observed, without being caused by diseases, as in persons who sleep with their mouths open, and may also proceed from moral causes affecting the nervous system. From the deposition of mucus, of bile, or of blood, the tongue may acquire a white, yellow, green, or even a black colour. Accidentally, particularly when vigorous abstinence is observed, the organ may acquire an unnatural colour from contact with various substances—wine, for instance; when a yellow or white deposit has formed, the tongue is always acid, the saliva remaining alkaline. The centre, edges, or apex of the organ may be the seat of morbid deposits. It is frequent to observe red specks on a white tongue, or to see its edges red and centre white. Abundant mucilaginous and warm drinks, abstinence from food, and relaxation of the bowels from medicine, facilitate the deposition of these morbid secretions, to which some individuals are more predisposed than others.

Changes of the special or common sensation of the tongue are also observed; a sense of heat generally accompanies removal of the epithelium. Neuralgia is also met with, and taste may be diminished, abolished, or perverted.

The movements of the tongue are impeded by its being swollen or dry; when the nervous system is deeply affected, its motions may be tremulous, irregular, uncertain; they may even be abolished altogether, or only one side.

Let us now examine the signification of these various symptoms in the different classes of diseases. In continuous pyrexia, the tongue furnishes more signs than in the intermittent; it assists in the distinction of forms, of complications, and of different degrees of severity of fevers, and leads to some therapeutic indications. In typhoid fever, for instance, the tongue is at first uniformly white, or dotted with red specks, and is generally humid broad, and soft. In favourable cases, this appearance persists throughout the disease, but may also vary; in the saburral form the deposits become thicker, and purgatives are indicated. When at the same time the apex and edges acquire a bright red colour, the exhibition of stimulants should be more guarded; the deposits may also disappear, and the tongue become uniformly red, being at the same time humid or dry. The cases in which these successive modifications are noticed are generally unfavourable, and stimulants would increase their severity. At a later period a black crust forms on the tongue, from extravasation of blood, and the epithelium breaks. It is a generally true remark that dryness and a dark coating of the surface of the tongue correspond with diminution of vital power, alteration of the blood, and depression of the nervous system, and that in such cases blood-letting should be carefully avoided.

The black colour and desiccation of the tongue may appear rapidly during any acute disease, in certain unfavourable conditions of the system. Thus, we often observe it in the phlegmasia of aged subjects, and in typhoid fever; the tongue gradually regains its natural colour and appearance during convalescence, but, until it has become quite healthy, some anxiety is justified. Such are the general rules; but, exceptionally, we find in fever that the tongue may remain natural throughout the disorder: this, however, is of sufficiently rare occurrence to render the accuracy of the diagnosis doubtful. The tongue is also found sometimes to have returned to its natural state, although the recovery does not progress—a circumstance which depends upon the continuance of the intestinal eruption. In eruptive fevers the alterations of the appearance of the tongue chiefly depend upon complications. In scarlatina, however, it acquires often, in the incipient stage, a bright scarlet colour, which may persist during the eruption, and even outlive it. The epithelium peels off, and the congestion of the fauces being propagated to the tongue, causes the special redness observed in scarlatina. During variola, dryness, swelling, and a black colour of the organ usually denote a serious complication; it may be occupied by pustules, or remain a long time dry—a sign of a very unfavourable nature, unless the nares are impervious to air. Intermittent pyrexia are not accompanied by any remarkable change of the tongue; during intense chills, however, the tongue may be cold and livid, as in algid fever; in the stage of heat it becomes red, and sometimes dry, but invariably recovers its natural appearance during the sudoral stage of each paroxysm.

Inflammatory congestion of the stomach is usually accompanied by redness of the tongue; but if the inflammation has been so rapid in its progress as to disorganize the viscus in a short time, the tongue may remain perfectly natural. Thus, during the last summer, we met with a case in which, although six gangrenous eschars had formed in the stomach, the tongue had not departed in the least from its usual appearance. In chronic gastritis the tongue is more or less dry and red, and its papillæ congested. In that form of bilious synochus called in France "*embarras gastrique*," the tongue is constantly covered with a uniform layer of white deposit, and is at the same time broad and soft: emetics and purgatives rapidly relieve this condition of the stomach. The perfectly natural aspect of the tongue is truly remarkable in cancer of the stomach, particularly during the first period of the disease, when cancer occupies the submucous cellular tissue. When the mucous membrane is invaded, the tongue sometimes becomes red and dry, and after repeated hematemeses, pale and colourless. In *gastralgia*, the tongue preserves its natural characters; but if the neurosis has been consequent upon chronic gastritis, the papillæ of the tongue may have acquired a degree of hypertrophy which may cause some hesitation in the diagnosis. In acute enteritis, colitis, dysentery, *colica pictorum*, the tongue is not modified, unless a complication be present. In cholera, during the blue period only, the tongue presents a special appearance, which we have already noticed.

In diseases of the organs of circulation, the tongue remains natural, unless considerable difficulty exists to the return of venous blood to the heart. In *phlebitis* it presents the same appearance as in typhoid fever—the black sanguineous coating, which always points to a great depression of vital powers, and to alteration of the blood.

In acute thoracic disorders, pneumonia, for instance, no signs can be extracted from the appearance of the tongue. In the aged, pneumonia is usually accompanied by the formation of dark crusts of desiccated blood, which positively counter-indicate the use of the lancet. In consumption the tongue is natural: at the close of the disease, however, it often becomes the seat of a pultaceous, pseudo-membranous secretion, by which the fatal termination of the case is generally ushered in. In pulmonary emphysema, when respiration is very laborious, a beginning of asphyxia may be observed, when the tongue assumes a bluish tinge, and its temperature at the same time descends below its average standard.

In diseases of serous membranes, the tongue undergoes no change; indeed, it is remarkable to see that organ preserve a natural appearance, in spite of the obstinate vomiting and febrile excitement which accompany peritonitis. In *icterus* the tongue seldom becomes yellow, whilst the velum is, on the contrary, tinged with bile. Maladies of the urinary organs readily modify the aspect of the tongue: in vesical catarrh, for instance, a dry, fuliginous tongue is not unusual.

When the nervous centres are the seat of morbid change, the sensibility and motility of the tongue are often modified. Its sensibility is not much altered by affections of the brain, but may be more so by diseases of the nerves; thus exquisite pain, or anæsthesia of the tongue, may result from an alteration of the fifth pair of nerves, and the organ may lose common or special sensation. Paralysis of motion of the tongue is the sign of many cerebral disorders. In general, the apex of the tongue, when caused by disease of one cerebral hemisphere, is deviated towards the paralyzed side. During the first days which follow apoplexy, it often happens that the tongue cannot be protruded from the mouth. In paralysis of the insane, (an improper expression, that form of paralysis not being special to the demented,) the first symptom of the disease is stuttering and difficulty of utterance; the diminution of muscular power in the limbs shows itself only later; and, in proportion with its progress, the intellect is observed also gradually to grow weaker. Paralysis of the tongue may be likewise produced without any physical change in the nervous centres—in cases of hysteria, for instance. It is always important to ascertain if paralysis of the face be the result of cerebral hemorrhage, or the effect of cold upon the *portio dura*; when paralysis is idiopathic, the tongue is never deviated; on the contrary, when distortion of the countenance is symptomatic of cerebral disease, the tongue is generally more or less deviated to one side.

2. *Signs furnished by exploration of the intestines.*—The sensibility of the intestines may be increased by disease; it is more increased, however, in colitis than in enteritis. In subjects affected with typhoid fever we observe great differences in this respect, some experiencing little or no pain; others, on the contrary, suffering considerably on the slightest pressure over the abdomen, and particularly over the ileo-cæcal region; these differences are to be explained by the more or less superficial nature of the ulcerations; when they are deep, and repose upon the peritoneum, they are usually accompanied with great tenderness of the abdomen. In the enteritis which is so frequently observed during the last stage of consumption, the pain is sometimes very great, for the reason above stated. In acute colitis, dysentery, for instance, the patients complain of great pain, not precisely on pressure, but in paroxysms; the sufferings can be traced from the cæcum to the rectum, and cause a sense of weight and spasmodic contractions of a very distressing nature. In chronic colitis more pain is present than in chronic enteritis. Persons who have had dysentery sometimes preserve a morbid sensibility of the intestines, and their motions are most painful, particularly when the bowels are slightly confined—a state of things which requires the combined exhibition of aperients and narcotics. Intussusception is also productive of much suffering, and is attended with obstinate vomiting and other symptoms of strangulation. Accumulation of solid matter or of gas may be equally productive of pain; but tubercles, or cancer of the intestines, do not cause pain; except, indeed, cancer of the rectum. We should also add, that in cancer of the intestines pain is always observed whenever the disease causes obstruction of the tube, and prevents the progress of the alimentary bolus. Piles, occasioning congestion of the rectum, may also occasion intestinal suffering; and the burning pain which attends fissura ani is special to that malady.

Most intestinal pains bear the name of colic, to which is superadded an epithet—biliary, inflammatory, nervous, &c.—to designate its nature. Nervous colic, or enteralgia, may arise spontaneously, and is remarkable sometimes by its extreme intensity and the faintness which it produces; it is occasionally the result of rheumatism; and in the disease called “colic of Madrid,” it is due to the sudden changes of temperature frequently noticed in the climate of that city. In the neighbourhood of the Ganges a similar form of colic is also observed, under the influence of the same causes. In colica pictonum, enteralgia is also present; it is not always relieved by pressure, but pressure certainly diminishes the sufferings of the patient during their exacerbations. The form of the abdomen in this disease is not changed, nor its walls retracted, as it has been so often erroneously stated. Nervous colic has been known to assume an epidemic form, at sea, for instance, after the prevalence of cold winds. In the colic caused by copper, the pain is also very great, but is accompanied by diarrhœa, and the disease certainly participates more of the nature of inflammation than of that of neurosis.

3. *Signs furnished by the alvine evacuations.*—These evacuations may escape from abnormal orifices, from fistulæ situated on the abdominal walls, or from openings into the bladder, vagina, &c. The anus may be imperforate in new-born children, &c. The stools may be suppressed in intestinal disease, at the outset of entero-colitis, or, after diarrhœa or purgatives, in enteralgia and colica pictonum; they also are absent when the passage through the intestines is obstructed, whatever the cause of the obstruction: in cerebral or spinal disease, occasioning paralysis of the muscular coat of the intestines; or when spasmodic contraction of a part of the intestines interferes with the passage of the matter contained within their cavity. In diseases not affecting primarily the bowels, we also may find suppression of the motions; thus the bowels are usually constipated in peritonitis, or diseases of the stomach, &c.

The increase of the alvine discharges bears the name of diarrhœa. Thus, in enteritis, whenever the follicles are enlarged, diarrhœa generally appears; this we observe in chronic diarrhœa, in cholera, &c. These diarrhœic stools may consist of mucous matter, or of a bilious flux, which does not by any means require intestinal inflammation for its production, but may simply result from increased hepatic secretion. In other instances the increased number of the motions is caused entirely by a greater activity of the peristaltic contractions of the intestines—a fact we often notice as a consequence of mental emotion, and in the diarrhœa



of children without the interference of inflammation. The quality of alvine discharges may also be modified. They may, for instance, contain undigested articles of food: when the intestines are irritated in one point, it is a fact demonstrated by observation that gastric digestion is incomplete, and allows unaltered nutriment to pass into the bowels: again, when the stomach is incapacitated by disease from performing chymification. In children, lientery, as this form of malady is termed, is not unusual, and milk is expelled in solid masses with the fæces. When the fæces contain no bile, they are soft and ash-coloured; this symptom is always connected with the presence of some obstacle to the free circulation of bile in the ductus choledochus or hepaticus. Diminution of the biliary secretion also causes irregularity of digestion, costiveness, and change of colour of the fæces; this state of things, not sufficiently noticed in France, has always excited much, perhaps too much, attention in England. Bile may also be discharged too copiously into the bowels, and communicate to the stools a dark-green or yellow colour. This is generally indicative of intestinal irritation, and may be connected with a morbid state of the liver. The green colour of the expelled bile is due to the modification of that fluid by the acedent state of the intestinal mucous membrane. Biliary discharges are frequently observed in spring and summer; they are even endemic in equatorial climates. The evacuations may be of a mucous nature: in dysentery, for instance, the stools are constituted by mucus tinged with blood; the mucus may be very consistent, and has been in that state mistaken for fragments of tænia, or it may be liquefied, and even puriform. In some morbid cases a watery discharge is observed, analogous, perhaps, in nature to the perspiratory fluid secreted by the skin.

The stools may also contain substances which are not usually met with in the intestines; a portion of intestine, for instance, detached by gangrene may be expelled; fragments of false membranes are sometimes rejected. Blood, when it has been recently extravasated, may pass with all its physical characters into the motions; but when the internal hemorrhage is less recent, it generally communicates to the evacuations a black colour. The former is observed in piles, dysentery, &c.; the latter in typhoid fever, and cancer of the intestines or of the stomach. The rice-water stools of cholera have been said to be constituted by the serum of the blood, and on this hypothesis an ingenious theory of the disease has been constructed. The fluid of these motions contains, however, no albumen, and, therefore, the theory falls to the ground; as to the white particles which float in the fluid, they are formed of innumerable corpuscles, furnished with very distinct nuclei and nucleoli, and are perfectly analogous to the corpuscles of pus. Pus is also found in the alvine discharges, and is always the symptom of a certain number of well-determined maladies; it is found in ulcerous colitis and in advanced cancers; in abscess of the liver and ovary; and may result from the opening into the intestines of purulent collections formed in various parts of the pelvis. False membranes, detected in the stools, are the sure signs of inflammation of the intestines. Intestinal or hepatic entozoa, calculi, and foreign bodies may also be contained in the motions. Their colour is sometimes changed by various medicines: they are coloured green by calomel, and black by iron. Microscopic examination of the fæces in cancer would probably show them to contain cancerous cells; and crystals have been met with, which Dr. Remak, of Berlin, erroneously asserts to be special to typhoid fever.

Gases may be produced in the intestine, hence borborygmi, indicative of indigestion and enteritis; hence, also, tympanitis, which is produced whenever an obstacle interferes with the circulation of the contents of the bowels, or in fevers, when the nervous system participates in the general disturbance. It is a singular and unprecedented fact, that in typhoid fever it is not the diseased part of the intestines which is occupied by tympanitis, but the colon; in fevers this accumulation of gas is always a sign of the most unfavourable nature. In neurosis, tympanitis is also a common symptom; we find it in hysteria and in hypochondriasis.

By ocular inspection we detect many diseases of the digestive tube; meteorism, tumours, piles, cancer of the rectum, syphilitic sores, fissura ani, fistula, abscess, displacement of the rectum, &c. Palpation informs us of the presence of fluids and gas in the intestines, shows the presence of stercoral tumours or cancerous

degenerations, spasmodic contraction, intussusception; and percussion permits us to ascertain correctly the volume and shape of tumours, &c.

ART. 30.—*On Chronic Amygdalitis, and the Treatment of Indurated Tonsils.*  
By Dr. J. NAUDIN.

The tonsils, by their situation, are often exposed to attacks of inflammation, which, after repeated occurrence, not unfrequently passes into a chronic state of induration. The disease is generally non-malignant, and affects both tonsils; carcinomatous induration being, on the contrary, much more rare, and affecting usually but one. The seat of this hypertrophy is neither the mucous membrane nor the cellular tissue, though their nutrition may also be altered, but in the glandular substance itself. The cause of the frequent occurrence of hypertrophy of glandular organs is, that possessing a supply of arterial blood infinitely greater than is necessary for their nutrition, a large portion of which is destined to supply the material for secretion, any circumstance which produces a suppression of this secretion causes the excess of arterial blood to become extended in the nutrition of the glandular substance, thereby inducing its hypertrophy and induration.—Physicians are generally very neglectful of chronic inflammation of the tonsils, too often allowing the case to run on, and finally putting it into the hands of the surgeon for excision. The means, if any, employed with the view of reducing the tumours, are generally insufficient; and our author, instead of blisters, astringent gargles, iodine, &c., substitutes gentle cauterization as employed in chronic inflammation of other organs. Instead of producing a slow progressive destruction of the tonsils, he aims at their preservation, and for this purpose employs a solution of nitrate of silver, 3 gr. to ℥j of water, increasing the strength by 3 gr. up to ℥ij of the nitrate, in the same quantity of water, and also applying the solid caustic to the surface of those hollows which usually exist in those tonsils, so that all parts may be equally affected. During one sitting the tonsils are painted twice or thrice; the mouth is then well washed with water.

This cauterization must be repeated every two or three weeks, until the tonsils are restored to their normal size, and then gradually discontinued: it produces no ill consequences, and even children speedily return to their play. Should the parts become accustomed to the caustic, it must either be discontinued for a time, or another substituted, as Lugol's diluted solution of iodine. In two cases related by our author, nitrate alone was employed. Both, æt. 13 and 14, had been affected for years, and were cured in two and a half to three months; in a third case, that of a girl, æt. 11, the disease was extensive and obstinate, requiring four months' use of the caustic, besides the use of hyd. potass. and iodine internally, and as ointment. In all these cases no return has been observed after the lapse of years, and the previous disposition to inflammation of the tonsils has been extinguished.

*Journ. de Toulouse, Juin et Juillet, 1846.*

ART. 31.—*Ulcerations of the Colon from the presence of a Calculus—Peritonitis—Death.* Case by Mr. SNAPE.—A man, æt. 20, had frequently complained of constipation, but had always been relieved by cathartic medicine. When seen by Mr. Snape, he was complaining of the obstinate state of his bowels, attended as before with pain, and drew his attention to a large hard tumour, situated in the left hypochondriac region, which was quite immovable. There was no tenderness on pressing the abdomen generally; tongue clean; pulse 80; appetite good; no thirst; urine natural in quantity, but depositing a sediment of lithic acid. He ordered a farinaceous diet, a bran-poultice to be applied to the abdomen, and exhibited castor-oil emulsion, with a little hyoscyamus, every four hours. On visiting him the next day, he found his treatment had had the desired effect; the bowels had been freely relieved; pain had vanished, and he stated that he felt better than he had done for six months. Upon examining his abdomen, he could not now find even a trace of the tumour, which led him to hope that it had been simply a collection of hardened feces, which were now got rid of. For several days he continued taking the emulsion once or twice, which had the effect of keeping him (as he said) quite well.

About a fortnight after his admission he again complained of not being so well,

having for some days given up taking his medicine. Upon examining his abdomen now, Mr. Snape again felt the tumour of the same size and hardness as before, but situated in the *umbilical* region. He resorted to the same treatment which had succeeded before, giving, in addition, hyd. c. cret. gr. v. at night. The next day he discovered the tumour in the right hypochondriac region, but his bowels had acted properly, and he stated that he felt quite well. Day after day he found the tumour in some fresh spot corresponding to the course of the colon, until Thursday, the 28th ult., when again it was not to be felt, and the patient expressed a desire to go out and resume his work. Mr. Snape advised him to stay a few days longer, to which he assented, although he said "he felt quite well, and able to do anything."

On November 1st he was found in a state of collapse, bedewed with perspiration, abdomen tympanitic, pulse small: he died the same day.

On examining the cavity of the abdomen, intense inflammation of the peritoneum was found; the omentum and intestines were closely matted together, and there was copious sero-purulent effusion. In the colon extensive ulceration was found, and in one portion of its course a perforation, through which *fæces* had escaped. Just above the sigmoid flexure an enormous calculus, measuring  $10\frac{1}{2}$  inches in its long circumference, was observed, which Mr. Snape supposes was a biliary concretion, increased in size by subsequent deposit. The common duct was dilated sufficiently to admit three fingers.

*Medical Times*, Nov. 13.

ART. 32.—*Acetate of Lead in Tympanites*.—Dr. Badeley mentions a case of temporary intestinal obstruction, with excessive tympanitic distension, in which the best effects followed the exhibition of the acetate of lead. Purgatives had failed to procure an evacuation. Vomiting supervened, with hiccough, and the coils of distended bowels could be felt through the abdomen. Feeling convinced that the symptoms depended upon a loss of tone in the muscular fibres of the alimentary canal, alum was ordered, with turpentine injections, and having failed, three grains of the acetate of lead, with one-sixth of a grain of morphia, were given every four hours. This was soon followed by the expulsion of large quantities of gas, and copious dejections. The hiccough and vomiting declined, and the man was soon convalescent.

*Lancet*, Jan. 8.

ART. 33.—*Treatment of Flatulence*. By Dr. Dick.—When the tongue is pale, when there is no tenderness on pressure at the epigastrium, or in the right hypochondrium, when there is no thirst, no dry heat of skin, and no quickness of pulse, flatulence requires carminatives, bitters, and even stimulants. Thus the patient may be directed to use freely any of the following waters:—cinnamon, fennel, cassia, pimento, peppermint, pennyroyal, mint, Cologne, lavender, caraway, aniseed, dill, balm; to these some of the respective tinctures may be added. With the carminative waters just named, one or more of the following bitters may be given—chamomile, quassia, columba, absinthium, rhubarb, to which may be added valerian, castoreum, and camphor. As an expellent of flatus existing in the bowels, assafoetida, or oil of turpentine, the former given by the mouth, or in injection, the latter in injection, are superior to all things else, excepting, perhaps, the infusion and spirit of armoracia.

Secondly. If flatulence is accompanied with a dry and preternaturally red tongue and fauces, with thirst, heat of skin, tenderness of epigastrium, scanty and high-coloured urine, heartburn, &c.—in short, with symptoms of inflammatory irritation of the gastro-duodenal mucous membrane, then alteratives are clearly indicated, or rather such substances as promote the secretions of the mucous membrane; these are ipecacuan, sulphur, potassio-tartrate of antimony, the various preparations of mercury, magnesia, iodine, nitrate of silver. These we would be disposed to give a trial to successively, almost in the order in which we have named them. But a great variety of other means may be tried, and among these the following, in those cases in which flatulence is accompanied with obvious torpor and fulness of the liver, as well as with gastric irritation. The wine of colchicum, for example, may be given with a few grains of the sulphate of potass,



or if there are acid eructations and heartburn, with carbonate of magnesia; the infusion or tincture of arnica may be given in the same combinations, and so may the powder and extract of cusparia. In short, instead of perplexing our minds with the confused subdivisions of authors, whose classifications betray they had no clear and scientific notions of the proper treatment of flatulence, the simple point to be ascertained and kept in view is, whether flatulence (always a mere symptom) is or is not accompanied with inflammatory irritation, is or is not attended with stomachic debility—and according as we decide these queries, we adopt the former or latter modes of treatment above enumerated.

When the eructations are acid, the most of vegetables in common use, except the cereal, must be abstained from. As Dr. Prout remarks, that, in the treatment of saccharine diabetes, he has seen the incautious use of one or two ripe pears undo all the apparent improvement of weeks or months of skillful medicinal and dietetic management, so it often happens in persons subject to flatulence, that a very minute and apparently trivial indulgence induces not unfrequently the utmost degree of uncomfortable gaseous distension, with its attendant sufferings, headache, &c. This is less to be wondered at, when it is considered that, according to Dr. Hales, the quantity of gas extracted from an apple, in the course of its undergoing the fermentative process, amounts to nearly 700 times its bulk.

Cases occur in both sexes of a sort of passive flatulence, so to name it, namely, meteorismus, unattended with any marked signs of stomachic or intestinal irritation, or with much discomfort, excepting the frequent necessity of getting rid of the flatus. In such cases, the flatus is usually nearly or wholly free of ill odour, and probably consists of nitrogen, oxygen, and perhaps carbonic acid, in nearly the proportions of atmospheric air. The treatment of these cases I have found more troublesome than their simple nature would lead, *a priori*, to expect. One or two have entirely baffled every form of treatment adopted, and the last accounts from one patient, a clergyman in the south of England, inform me that the annoying affection continues just as it was when he first put himself under my care, nearly two years ago.

There can be little doubt that the occurrence of flatulence is immensely favoured by the temperature at which many persons swallow soups, coffee, tea, &c., and the debilitating effect which large and systematic potations of the latter have on the functions and secretions of the gastro-enteric mucous membrane. The truth is, that cold, applied in drinks of low temperature, and even in iced fluids, is not less remarkable as a *stomachic tonic*, than is the *external* application of cold as a tonic of the sentient and motor nerves.

*Lancet*, Nov. 20, 1847.

## SECT. VI.—DISEASES OF UNCERTAIN OR VARIABLE SEAT.

ART. 34.—*Therapeutical Action of Phosphate of Ammonia in Gout and Rheumatism.*—Dr. Edwards confirms the advantages of this medicine in certain diseases, which appear to depend upon the presence of an excess of lithic acid, or lithates in the blood. He has used it in acute rheumatism, when the inflammatory symptoms had subsided.

In *chronic articular rheumatism*, he has used it after the bowels have been well cleansed by calomel or other purgatives, or, if the constitution is vigorous, the vascular action strong, and heat high, after venesection, and has got rid of these attacks much sooner than formerly. In muscular rheumatism, whether of the acute or chronic form, he has employed this remedy with greater success than in any other. After the action of the intestinal canal was somewhat regulated, he has generally been able, without further preface, to administer it in lumbago, pleurodynia, ischio-gluteal rheumatism, epicranial, cervical, and facial rheumatism. In these he has seen it of peculiar service, and in one case of rheumatic ophthalmia, after the inflammatory symptoms had been reduced, and the patient was annoyed with the pains about the eye and brow, in which he administered it, it was attended with alleviation and subsidence of the pains within sixteen hours of being commenced.

With respect to gout, the author's opportunities of applying this remedy have been less numerous than in rheumatism, yet numerous enough to enable him to speak with certainty of its great value as a remedy; when given in the doses mentioned, it produces but little sensible operation beyond that most important of all, the gradual (in two or three cases I have seen it act almost instantaneously), diminution of the distressing symptoms. With this view, he has always prefaced its use by well cleansing out the bowels with proper aperients, and then ordering the phosphate every eight hours in simple water, or occasionally in conjunction with a bitter infusion and spirits of nitre, the best infusion, perhaps, being that of the serpentaria, as it determines to the skin. Attention, both before and during the administration of the phosphate, to the due performance of the various functions connected with the primary assimilating processes is of great moment. A slight alterative aperient of mercurial pill and compound rhubarb pill, given every other night, twice or thrice, has answered well. He has seldom meddled with the inflamed part, beyond ordering perfect rest, and exciting perspiration by means of fleecy hosiery or flannel, covered over with oil-silk, occasionally a light anodyne poultice or narcotic fomentation, and of course a consistent diet, and abstinence from everything irritating both of body and mind, were points duly remembered. In the third case in which he employed the salt, it was strikingly beneficial. A poor man, a dispensary patient, a very gouty subject, had had an attack for two or three weeks, being confined wholly to his bed or arm-chair. He had tried most of the renowned remedies, with little or no relief. On a Wednesday afternoon he commenced taking the phosphate of ammonia (ten grains every eight hours), and on the Friday morning following he attended at the dispensary, walking each way, and informed Dr. Edwards he had lost all pain, and that the swelling and stiffness were rapidly subsiding. To use his own words, "the second dose of this last mixture had acted like a charm." On the Tuesday following he began his work again as a mason. Dr. Edwards ordered his continuance for a short time of the salt, combining it with a bitter infusion, and the regular use of a mild aperient.

This latter point of continuing the remedy a short time. Dr. Edwards considers a matter of importance, paying at the same time particular attention to the condition of the digestive organs. With regard to the value of this salt as a solvent upon the gouty concretions when formed, his experience does not enable him to speak with any certainty, but his observations lead him to state in a positive manner its powers to arrest the increase, and perhaps the formation of them. So great is the solvent action of the phosphate of ammonia, after being introduced into the system, upon uric acid, that he is almost inclined to think calculous disease of that nature may be very greatly benefited by its employment. In lithic-acid gravel he has frequently used it, and experience has taught him that it causes a very rapid decrease and disappearance of the red crystalline sediment; it quickly reaches the urine (as he has testified oftentimes upon his own person) when largely diluted. Mr. Alexander Ure\* has recommended the benzoic acid for the same purpose. Dr. Edwards has used it many times, but never with so marked a result as with the phosphate of ammonia.

*Prov. Journ.* Nov. 27.

ART. 35.—*Cold Applications, with Opium and Quinine, in Acute Rheumatism.*—In a case of acute rheumatism, complicated with nodes on the shins, and syphilis, an ineffectual attempt to obtain the specific effects of mercury had been made in the commencement of the case. When in health, the patient weighed 220 pounds. He had been confined to bed four months, and when admitted, was unable to bend the knee, wrist, elbow, or finger-joints, without great pain. Cold-water dressings were kept constantly applied to the painful joints, half diet was allowed, and he took at bedtime, every night, two pills, composed of four grains of opium, and four grains of sulphate of quinine. On the tenth day of treatment, he left his bed. His weight was 136 pounds. At the expiration of twenty days the pain had disappeared; the quinine and opium were discontinued. There still remained thickening and stiffness about the joints. For this condition, phosphoric acid in syrup

\* *Med.-Chir. Trans.*, Vol. xxiv.

of *Prunus Virginiana* was prescribed, as follows: R Sol. acid. phosphorici, dr. ij; Syrup. pruni virg., q. s. ut ft. oz. viij; M. Capt. oz. ss, in Aq. font., oz. iv, quarta quaq. hora. Under this treatment the functions of the joints were perfectly restored, and the patient gained twenty pounds in weight in thirty days, and the nodes disappeared.

While taking the quinine and opium, the bowels, which had been previously constipated, were regularly moved once in twenty-four hours; but under the use of phosphoric acid, it was found necessary to occasionally prescribe castor-oil, and an anodyne at night.

Dr. Ruschenberger, of the U.S. navy, who reports the case, has been in the habit of treating acute rheumatism, upwards of two years, by cold applications to the hot and swollen joints, and administering at night from three to six grains of opium, with an equal quantity of sulphate of quinine, regulating the quantity by the condition of the pupil alone. With a dilated pupil, he found patients to bear the largest dose without inconvenience, and he has not yet met a single case in which pain was not completely removed in from twenty-four to thirty-six hours, provided the attack were recent, or of not more than a week's duration. Large doses of opium, especially in combination with sulphate of quinine, do not tend to constipate, but rather to relax the bowels. After the pain is removed by the opium, he then resorts to the use of the iodide of potassium, in medium doses, say from five, increased gradually, to ten grains, three or four times daily.

Passed Assistant-surgeon S. Holmes, who witnessed the results of this practice in his hands, has made trial of it on the coast of Africa, and with entire satisfaction.

*American Journ. of the Med. Sciences*, July.

## SECT. VII.—DISEASES OF THE URINARY SYSTEM.

### ART. 36.—*Extracts from Professor Andral's Lectures.—Semeiotics of the Renal System.*

(*Medical Times*, Feb. 19, 1848.)

We now turn to those signs of disease furnished by the urinary apparatus. We described in the first series of these lectures the alterations of urine, and will now only consider them as symptoms of disease. The quantity of the renal secretion may be increased, as in polydipsia—a disease which may be idiopathic, or connected with diabetes mellitus. The urine is diminished, on the contrary, in febrile excitement, and when abundant perspiration is produced, the secretion may be altogether suppressed—a fact chiefly observed in Asiatic cholera. The colour of urine depends in a great measure upon the proportion of water which it contains; if the secretion be bloody, the urine is of a dark red colour. In hysteria, in chlorosis, the urine is pale, because the solid elements are less abundant; in hysteria, the colourless appearance is remarkable and unexplained. Urine may be coloured by the presence of blood or bile: the blood may have oozed from the urethra, or come from the bladder, either from idiopathic hemorrhage, vesical calculus, or cancerous disorganization. When the blood comes from the kidney it usually indicates the presence of concretions, and sometimes, but rarely, precedes the development of albuminuria. Hematuria may finally be symptomatic of a general tendency to hemorrhage—as scorbutus, purpura, typhus, yellow-fever, &c. Bile is found in the urine only when jaundice is present, or a very short time before its appearance. When the greenish colour is not distinct, it becomes so by the addition of a few drops of nitric acid. The odour of urine is never fetid in disease, except when it has sojourned in a diseased bladder. Some substances communicate a peculiar odour to the secretion, asparagus and turpentine, for instance. The taste of urine is sweet only in diabetes mellitus. In all diseases, as well as in health, the urine remains acid or neutral. If the bladder be diseased, or the urine be allowed to remain a long time without being removed, it may acquire an alkaline reaction. Thus, in disorders of the spinal cord, in which the bladder is paralyzed, the urine becomes alkaline; but in other maladies this is



never the case; even in albuminuria, the renal secretion remains acid. Accidentally, during the course of disease, for one or two days, and under the influence of special articles of food, the urine may cease to be acid; but not in any continuous manner, nor for any length of time. During disease, urine may spontaneously, or from the influence of chemical reagents, lose its transparency. Let us examine the deposits in these two different cases.

When the urine becomes spontaneously opaque, the disturbance may be general throughout the fluid, or form at the bottom of the vase sediments and deposits, or assemble in the middle, or on the surface, in the shape of clouds or *eneoremata*. The latter merely betray the presence of mucus in a healthy or almost healthy state; they are observed in *leucorrhœa*, in feverishness, and sometimes in health. Troubled urine (*urine jumentæ*) indicates the presence of abundant mucus, or of the acid lithate of ammonia; two circumstances which can be readily distinguished from each other; heat and nitric acid dissolving the lithate, and exercising no action upon mucus. Excess of lithate is observed at the incipient stage of many diseases—in dyspepsia, feverishness, &c. We will now enumerate the various sediments of urine: 1st. Uric acid forms a sediment of lozengic crystals, and is characteristic of red gravel. 2. The phosphate of ammonia and magnesia, or phosphate of lime; these substances depose spontaneously in the urine in white gravel, but are thrown off in the bladder when pus is in contact with the urine. It is this triple phosphate which is not unfrequently observed upon the surface of catheters. 3d. Lithate of ammonia; white, when in a pure state: pink, when mixed with a certain colouring matter, formerly called *rosaic acid*, as in cases of intense febrile excitement, attended with profuse perspiration, or of cirrhosis accompanied by considerable ascites. This deposit, which dissolves on the addition of nitric acid, or the application of moderate heat, was for a long time erroneously looked upon as critical in the course of febrile diseases—an opinion disproved by rigorous observation. 4th. Blood may be observed in urine, and its nature is in general readily ascertained. 5th. Mucus, when abundant, assembles at the bottom of the vase which contains urine, and indicates vesical catarrh, and cystitis. It is not removed by nitric acid, and is very slightly diminished by heat. 6th. Pus, when found in urine, always communicates to it an alkaline reaction, and an ammoniacal odour. The pus may have originated in the urethra, bladder, or kidneys, or proceed from some abscess which has opened into the urinary cavities. 7th. False membranes are sometimes deposited from urine, a fact not uncommon after the application of the *emplastrum lyttæ* to any part of the skin. 8th. The urine may present deposits which attest the presence of cancer in the bladder; and sometimes the urine is altogether replaced by a fetid liquid, a forerunner of a speedy fatal termination. 9th. Spermatic matter may be deposited in the renal secretions, but its nature must be tested by the microscope. And, finally, the urine may contain *fæces*, when a morbid communication has accidentally been established between the lower part of the digestive tube and the urinary organs.

All these deposits may spontaneously be formed in the urine; but others may also be obtained artificially, and are of considerable value to the diagnosis. Thus, for instance, lithate of ammonia may exist in urine without being spontaneously deposited. The addition of two or three drops of nitric acid cause the precipitate to form, and a few drops more of the acid dissolve it again. Nitric acid, and heat also, sometimes cause the coagulation of a certain quantity of albumen contained in the renal secretion. If the urine has become alkaline, heat alone, without the previous addition of acid, will be insufficient to cause coagulation of the albumen. Heat occasionally produces the formation of a slight deposit, which disappears with effervescence upon the addition of nitric acid. This deposit is constituted by carbonates; but we do not at present very clearly understand the cause or the mechanism of their formation. The discovery of the accidental presence of albumen in urine is a conquest of modern science; and Dr. Bright established that this fact was always connected with a variety of dropsy, in which the kidney is constantly diseased. Whenever for any length of time we have found the urine albuminous, we have always found, also, the kidneys altered in a manner which it is not our present object to examine in its various stages, degrees, and, perhaps, natures. This albuminous urine is pale and frothy; its specific gravity is much diminished; some of its solid elements, urea, for

instance, ceasing to be excreted from the kidneys. In disease of the heart, when the kidneys are the seat of considerable congestion, the urine may also contain albumen in a temporary manner. In all these instances the debility of the patient gradually increases with the daily loss of albumen.

In diabetes mellitus, caustic potass, heat, or milk of lime, produces in the urine a brownish deposit, consisting of glucosis, or grape-sugar. According to the quantity of the latter, the colour may vary from a lemon colour to a dark brown. The urine should, in the first place, be tested by heat, when albumen, if any be present, will be coagulated; after filtration the fluid should be submitted to contact with one of the above-named re-agents, which will detect very small quantities of sugar. Trommerz's fluid (potass and tartrate of copper) has also been used for the same purpose, and forms in diabetic urine a precipitate, at first yellow and afterwards red, constituted by protoxide of copper. These various chemical actions should be completed by evaporating the urine to a syrupy consistency, and, by the addition of a ferment, endeavouring to establish alcoholic fermentation. M. Guévenne discovered in diabetic urine the presence of microscopic globules of ferment. In diabetes mellitus, the specific gravity of the urine is always increased, and oscillates between 1022 to 1044: 1018 being the average density of healthy urine. Its colour is usually pale, and its odour feeble, except when boiled, a distinct smell of burned sugar being then produced; when fermented, it exhales the peculiar smell of alcoholic fluids. Its taste is not always very distinct, and one of the best signs of the presence of sugar in the urine is the fact discovered by M. Biot, that it polarizes light to the right side. The observation has been fully confirmed by the researches of Bouchardat and Martin Solon. We should be aware that albumen deviates the rays of light to the left, and, therefore, when the presence of albumen coincides in the urine with that of sugar, the deviations may neutralize each other, and lead to an inaccurate appreciation of the quantity of sugar. It is, therefore, necessary to remove the albumen first, by coagulation and filtration, before the urine be tested by the polarimeter.

ART. 37.—*On Albuminuria independent of Renal Disease.* By Dr. FINGER, of Prague.—Among about 600 medical cases of various kinds in the general hospital at Prague, the urine was found to contain albumen in 155. Among these were—

Tuberculosis . . . . .	186 cases.	Albuminuria in	46
Typhus . . . . .	88 "		29
Puerperal fever . . . . .	46 "		32
Carcinoma . . . . .	14 "		6
Chlorosis . . . . .	6 "		2
Acute rheumatism . . . . .	18 "		0
Ague . . . . .	10 "		1
Pneumonia . . . . .	33 "		15
Pleurisy . . . . .	14 "		2
Peritonitis . . . . .	6 "		2
Chronic catarrh . . . . .	16 "		3
Diarrhœa . . . . .	65 "		8
Disease of heart . . . . .	18 "		7
Epilepsy . . . . .	2 "		2

The remaining cases were 3 of chorea, 6 of paralysis, 2 of tetanus, and 3 of hysteria; in these no albumen was found.

Of the 46 cases of tuberculosis with albuminous urine, 35 died; in 19 of these there had been œdema of the lower extremities, leading to a suspicion of granular disease of the kidney, which was nevertheless found to exist in 2 cases only.

Of the 29 cases of typhus, 17 died; disease of the intestinal glands was present in all, combined in 2 cases with pneumonia; the kidneys were sound in all the cases. The albumen appeared in the urine generally from the 16th to the 25th day, while the disease was on the increase or at the height; in those which recovered, it uniformly declined and disappeared during the convalescence.

The large proportion of cases in which puerperal fever was accompanied by albuminous urine, is explained by the admixture of the urinary and lochial discharges; in 6 cases, however, which were fatal from peritonitis, and in which the kidneys were sound, the albumen continued to present itself in the urine after the disappearance of the lochia.

In 4 of the 6 cases of cancer, the albumen was evidently from the admixture of uterine discharges. The kidneys were sound in all.

In 9 of the cases of pneumonia, the albumen disappeared from the urine during convalescence. In 6 which died, the kidneys appeared sound.

Dr. Finger is disposed to conclude that in cases like the greater part of the above, where albumen appears in the urine along with a fibrinous or purulent exudation into some organ of the body, it is in consequence of these exudations being re-absorbed into the blood, and evacuated as effete matter by the kidneys. In support of this view he gives three cases where albumen appeared in the urine simultaneously with the formation of abscesses in different parts of the body; and in two of which it was observed to disappear rapidly on the abscess being opened, and the pus evacuated.

Dr. Finger speaks strongly of the necessity of caution in the diagnosis of diseased kidneys from the presence of albuminous urine, where the evidence derived from the history of the patient is from any cause not conclusive. He narrates two very interesting cases of patients admitted to the hospital, with all the usual symptoms of cerebral disorder from retained urea, in whom there was also a large quantity of albumen in the urine; and which, nevertheless, after death, presented no appearance of granular kidney. In one, there was slight puerperal peritonitis, and inflammation of the brain and its membranes, with two abscesses in the right hemisphere; in the other, there was inflammation and purulent deposition in the urinary passages, with obstruction of one ureter and impediment to the function of the corresponding kidney, which was very much distended. In both these cases the diagnosis of Bright's disease, which was the one arrived at, was unavoidable, from the absence of any history of the patients' illness, and the state of insensibility on admission.

In the two cases of epilepsy in which albuminuria was discovered, the albumen presented itself only after a convulsion, diminishing, and gradually disappearing, after the lapse of thirty-six hours. This observation is important in connexion with the cases recorded by Lever and others, of the concurrence of albuminuria with puerperal convulsions.

*Prüger Vierteljahrschrift.* 1847. No. IV.

ART. 38.—*Irritable Bladder from Tapeworm.*—The following case is reported by Mr. TUFFNELL:—A man, of temperate habits, complained of excessive irritability of the bladder, with difficult micturition. His health had been good till three months previously, when he began to suffer from the usual symptoms of dyspepsia, with irritation of the rectum and hemorrhoids. These symptoms increased, and to them were added tenesmus and frequent calls to make water, which was voided in a twisted jet, and accompanied by severe straining, but no pain. He received temporary relief from taking opium; but he became emaciated, and his health had suffered severely before he applied for medical assistance. A small bougie when introduced was arrested, and grasped tightly by a stricture at the membranous portion of the urethra, the probable result of an attack of gonorrhœa, from which he had suffered some years before. The urine was highly acid, and loaded with lithate of ammonia. The prostate was of natural size, but very sensitive to the touch. The patient was ordered to rest in the recumbent position, to have a pint of tepid water injected up the rectum, night and morning, to relieve local irritation, and to take infusion of calumba with tincture of hyoscyamus, and liquor potassæ, the bowels at the same time to be evacuated by castor oil. Under this treatment he improved so rapidly that he resumed his usual habits at the expiration of a week. His symptoms, however, immediately recurred, and were as immediately relieved by his resuming his former treatment, with the horizontal posture. A second speedy recovery was effected; but he returned in a few days, suffering severely, and anxiously desiring an operation for his relief, being con-



vinced that he suffered from urinary calculus. The irritation about the anus had now greatly increased, and he was observed at the same time to be frequently rubbing his nose, which suggested the idea of the possible presence of worms in the intestines. A purgative of turpentine and castor oil was accordingly administered, and the following morning a tapeworm, measuring thirty feet, was evacuated. All the former symptoms immediately subsided, the urine became clear and healthy, and the patient was soon restored to permanent health.

*Dublin Med. Press*, Feb. 1848.

## PART II.

# SURGERY.

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### SECT. I.—SYMPTOMATOLOGY AND DIAGNOSIS OF SURGICAL DISEASES.

ART. 39.—*Constitutional Syphilis of Infants.* By MM. TROUSSEAU and LASEGUE, of Paris.

(*Monthly Journ. of Med. Science, from the Archives Générales de Médecine.*)

THE authors consider it established that syphilis may be transmitted, either in its primary or secondary form, directly from the mother to the infant; but they hold that there is no proof of the transmission of tertiary lesions, except as a consequence of the primary or secondary forms.

They are disposed to deny the appearance of syphilis in the infant at birth, or at any period before the second week. They suppose the alleged cases of its earlier appearance to have been founded on misconceptions, either of accidental ulcerations or mucous discharges, which prove nothing with regard to the constitutional affection, or of a general cachectic aspect, which has been described with great confidence, but which MM. Trousseau and Lasèque consider as being too vague in its characters, and too uncertain in its occurrence, to form the basis of a diagnosis.

One of the earliest and most characteristic signs of the appearance of syphilis in the infant is a coryza, which begins at first with mucous secretion, followed by serous and purulent discharges, and by hæmorrhage of greater or less frequency, and terminating in caries and deformity of the nasal bones. This affection they believe to be peculiar to syphilitic infants.

Almost equally characteristic is a particular discoloration of the skin, which becomes tarnished and loses its transparency, without, however, any preternatural turgescence or shrinking. The colour is unequally diffused over the face and trunk; the greater its diffusion, the less, generally speaking, is its intensity. This tarnished hue of the skin rarely lasts more than a week.

Next in importance and succession are the eruptions. On this point the authors remark, that it is impossible to found a valid diagnosis upon an eruption taken apart from all other symptoms; but that the concurrence of an eruption with other and less variable signs is sufficient to place the conclusion upon a firmer basis. The different characters supposed to indicate a syphilitic eruption are then discussed, and it is shown that neither the copper-coloured stains, nor the dark hue of the crusts, nor the circular disposition of the eruption, can at all be relied on in the diagnosis of infantile syphilis.

The above are the earliest and most characteristic symptoms; in the subsequent progress of the disease the infant becomes cachectic; accidental wounds assume an unhealthy aspect, and heal with difficulty; the umbilical cicatrix is apt to remain open, and to become fungous. Sometimes, though by no means constantly, there is gradual emaciation; the violence of the internal disorder bearing no proportion to the intensity of the external signs. The infant does not take the breast readily; sleep is short and interrupted; it cries frequently, and without appreciable motive; and, concurrently with these symptoms, diarrhœa is established,

which it is exceedingly difficult to subdue. The mouth and anus, where the mucous membrane joins the skin, are cracked and fissured, and the discharges by stool are often bloody. Under these circumstances the infant, impoverished and weakened in constitution, falls a victim either to the chronic disorder, to the reigning epidemic, or to some accidental acute disease. The fatal sinking is in general extremely rapid, and not preceded by the usual warning circumstances, and the inspection of the body does not explain the rapidity of the fatal termination. The most constant lesion is serous effusion into all cavities.

ART. 40.—*Excerpta from "A Treatise on Fractures in the Vicinity of Joints," &c.*

By DR. R. W. SMITH, Dublin.

I. *Fractures of the neck of the femur.—Conclusions on their diagnosis and pathology.*—1. A slight degree of shortening, removable by a moderate extension of the limb, indicates a fracture *within* the capsule.

2. The amount of *immediate* shortening, when the fracture is within the capsule, varies from a quarter of an inch to one inch.

3. The degree of shortening, when the fracture is within the capsule, varies chiefly according to the extent of laceration of the cervical ligament.

4. It also varies according as the fracture is impacted or otherwise.

5. In some cases of intracapsular fractures, the injury is not immediately followed by shortening of the limb.

6. This is generally to be ascribed to the integrity of the cervical ligament.

7. In such cases, shortening may occur suddenly, at a period more or less remote from the receipt of the injury.

8. This sudden shortening of the limb is, in general, to be ascribed to the accidental laceration of the cervical ligament, previously entire, and is indicative of a fracture within the capsule.

9. The deposition of callus around the fragments is not necessary for the union of the intracapsular fracture.

10. When osseous consolidation occurs in the intracapsular fracture, it is effected by the direct union of the broken surfaces, which are confronted to each other.

11. The osseous union of the intracapsular fracture is most likely to occur when the fracture is of the variety termed "impacted."

12. In the intracapsular fracture the mode of impaction is different from that which obtains in the extracapsular.

13. The degree of shortening, when the fracture is external to the capsule, and does not remain impacted, varies from one inch to two inches and a half.

14. When a great degree of shortening occurs immediately after the receipt of the injury, we usually find a comminuted fracture external to the capsule.

15. The extracapsular fracture is accompanied by fracture with displacement of one or both trochanters.

16. The extracapsular *impacted* fracture is accompanied by fracture without displacement of one or both trochanters.

17. In such cases, the fracture of the trochanters unites more readily than that of the neck of the bone.

18. The degree of shortening, in the extracapsular impacted fracture, varies from a quarter of an inch to an inch and a half.

19. The exuberant growths of bone met with in these cases have been erroneously considered to be merely for the purpose of supporting the acetabulum and the neck of the femur.

20. The final cause of their formation is the union of the fracture through the posterior intertrochanteric space.

21. The difficulty of producing crepitus, and of restoring the limb to its normal length are the chief diagnostic signs of the impacted fracture.

22. The position of the foot is influenced principally by the obliquity of the fracture, and the relative position of the fragments.

23. Inversion of the foot may occur in any of the varieties of fracture of the neck of the femur.

24. When the foot is inverted, we usually find that either a portion or the entire of the extremity of the lower is placed in front of the superior fragment.



25. In cases of comminuted extracapsular fractures, with fracture and displacement of the trochanters, the foot will generally remain in whatever position it has been accidentally placed; it may be turned either inwards or outwards, or there may be inversion at one time, and eversion at another.

26. Severe contusion of the hip-joint, causing paralysis of the muscles, which surround the articulation, is liable to be confounded with fracture of the neck of the femur.

27. Severe contusion of the hip-joint may be followed, at a remote period, by shortening of the limb, and eversion of the foot.

28. The presence of chronic rheumatic arthritis may not only lead us to suppose that a fracture exists when the bone is entire, but also, when there is no doubt as to the existence of fracture, may render the diagnosis difficult, as to the seat of the injury with respect to the capsule.

29. Severe contusion of the hip-joint, previously the seat of chronic rheumatic arthritis, and the impacted fracture of the neck of the femur, are the two cases most likely to be confounded with each other.

30. Each particular symptom of fracture of the neck of the femur, separately considered, must be looked upon as equivocal. The union of all can alone lead to the formation of a correct opinion as to the nature and seat of the injury. (P. 110.)

## II. *Fractures of the bones of the forearm, in the vicinity of the wrist-joint.—Corollaries.*

—1. Fracture of the lower extremity of the radius, close to the wrist-joint, with displacement of the lower fragment backwards, may, with propriety, be termed “Colles’s Fracture.”

2. Colles’s fracture may be the result of a fall either upon the palmar or dorsal surface of the hand.

3. In Colles’s fracture the carpus does not project towards the palmar surface of the limb, as has been stated by Sir Astley Cooper.

4. In this injury the head of the ulna projects at the inner border of the carpus, in consequence of the hand being carried in the opposite direction, “*par un mouvement de totalité.*”

5. In consequence of this displacement outwards of the hand, the internal lateral ligament of the wrist-joint is stretched, and severe pain is felt below the head of the ulna.

6. The distortion which characterizes Colles’s fracture is the result of the combined action of the supinator longus, the extensors of the thumb, and the radial extensors of the carpus.

7. The presence of this deformity presupposes the integrity of the lower extremity of the ulna, and of the inferior radio-ulnar connexions.

8. In this injury there is scarcely any diminution in the transverse diameter of the forearm, the cylindrical form which the limb acquires being owing, partly, to effusions among the flexor tendons, but principally to the increase in the antero-posterior diameter of the forearm at the seat of the fracture, consequent upon the displacement backwards of the lower fragment.

9. In Colles’s fracture the radius is usually broken from half to three quarters of an inch above its carpal surface.

10. In Colles’s fracture the radius is generally broken transversely, with respect to the antero-posterior diameter of the bone; but the fracture may be oblique from above downwards and inwards, or downwards and outwards.

11. The external deformity would lead us to suppose that the radius had been broken very obliquely, even in those cases in which the fracture is accurately transverse, with respect to both diameters of the bone.

12. This apparent obliquity is owing to the threefold displacement which the inferior fragment undergoes, in consequence of which the aspect of its articulating surface becomes directed upwards, backwards, and outwards.

13. The opinion of Diday, that there is in this fracture an overlapping of the fragments, does not appear to be correct. Such an event has not been demonstrated in recent specimens of the injury, and in old cases the appearances are deceptive; but even in the latter, when the bone is divided from before backwards, the fracture is usually found to have been transverse. In such cases overlapping

could not happen, and the possibility of its occurrence is difficult to be conceived, even in oblique fractures, as long as the ulna and the radio-ulnar ligaments remain uninjured.

14. In Colles's fracture the posterior surface of the limb is shortened; but the anterior *may* be increased in length, in consequence of the divarication of the fragments in front.

15. The amount of this increase will depend upon the amount of displacement, upwards and backwards, of the carpal surface of the lower fragment.

16. To account for the shortening of the posterior surface of the bone, it is not necessary to suppose that there exists overlapping of the fragments. The shortening is to be ascribed to the alteration in the aspect of the carpal surface of the bone.

17. In Colles's fracture the pronator quadratus acts principally upon the lower extremity of the superior fragment.

18. The theory of Voilhmer, which supposes that the superior is driven into the inferior fragment, appears to me to be liable to the following objections:—

a. The distance between the line of compact tissue and the posterior wall of the lower fragment is not the measure of the amount of displacement backwards of that fragment.

b. This interspace is considerable, even in those cases in which the fragments are found to be upon the same plane in front.

c. Were the theory correct, the amount of shortening of the posterior surface of the bone should be much greater than it ever is in cases of Colles's fracture.

d. There is no correspondence between the length of the line of compact tissue and the amount of shortening of the back of the radius.

e. The possibility of either fragment being driven into the other is difficult to be conceived, as long as the ulna remains entire, and the ligaments which connect it to the radius uninjured.

f. The appearances disclosed by the examination of recent specimens are opposed to the doctrine of Voilhmer.

g. Were it possible to separate the united fragments, and draw down the inferior so far as to extricate it from the apparent impaction, we should not succeed thereby in restoring in normal form the lower end of the radius.

19. The compact structure of the shaft of the radius appears to have penetrated the lower fragment, in consequence of its having become encased in osseous matter, deposited for the union of the fracture.

20. The extent of this deposit regulates the length of the line of compact tissue, which appears to have been impacted.

21. In the treatment of Colles's fracture the object most difficult to be accomplished is to restore to the carpal surface of the radius its natural direction *forwards*, and thus render the posterior surface of the bone longer than the anterior, as it is in the natural state.

22. The upper and lower fragments of the radius should be pressed in opposite directions, the former backwards, and the latter forwards; but the principal amount of pressure should be exerted upon the inferior fragments.

23. The use of a curved splint, which preserves the hand in a moderate state of adduction, supersedes the necessity of employing the ulnar splint of Dupuytren.

24. The object proposed to be attained by keeping the hand in this position is to restore to the carpal surface of the radius its normal direction inwards.

25. Fracture of the lower extremity of the radius, with displacement of the lower fragment forwards, is generally the result of a fall upon the back of the hand.

26. This injury is liable to be mistaken for dislocation of the carpus forwards.

27. The principal diagnostic signs of the nature of the accident are the facility with which the deformity can be removed and crepitus produced, and the obliquity of the outline of the dorsal tumour, its external portion (or that constituted by the extremity of the superior fragment of the radius) being placed higher up than its internal portion, which is formed by the head of the ulna.

28. Fracture through the lower extremities of the radius and ulna is very liable to be mistaken for dislocation of the carpus backwards.

29. The chief diagnostic signs of the fracture are the following:—

a. The styloid processes of the radius and ulna maintain their normal relations to the carpus, and move with the hand.

b. The distance between the margin of the dorsal tumour and the ends of the fingers is greater than that between the upper edge of the carpus and the extremities of the fingers of the uninjured limb.

c. A very moderate degree of extension is sufficient to restore the fragments to their proper relative position; but when the extending power is removed, the original deformity is exceedingly liable to recur.

d. When the deformity has been reduced by extension and counter-extension, the carpus can be readily moved backwards and forwards, and during these motions a crepitus is distinctly felt. (P. 171.)

III. *Fractures of the humerus in the vicinity of the shoulder-joint.*—1. The most valuable diagnostic signs of fracture detaching the greater tubercle of the humerus are an increase in the breadth of the shoulder, and a vertical sulcus, corresponding to the upper part of the bicipital groove.

2. When there is much displacement of the tubercle, in consequence of the rupture of the fibrinous and tendinous structures which invest it, ligamentous union is more likely to be the result than osseous.

3. Independent of fracture through the greater or lesser tuberosity, the upper extremity of the humerus is liable to be broken in three situations, viz., through the surgical neck, through the line of the epiphysis, and through the anatomical neck, or narrow line, which separates the head of the bone from the tubercles.

4. There are two varieties of the impacted fracture of the upper end of the humerus; one situated external to, and the other within, the capsular ligament. The former may pass either through the tubercles, or through the line which, in the young subject, marks the junction of the epiphysis with the shaft: the latter traverses the anatomical neck of the bone.

5. In the former, it is generally the inferior fragment which penetrates the superior, while, in the latter, the head of the bone is driven into the lower fragment.

6. In the former, crepitus is not elicited without the application of considerable force; in the latter, it can be produced with comparative facility.

7. The intracapsular impacted fracture is generally accompanied by a fracture of one or other, or of both tubercles, and is so far analogous to the extracapsular impacted fracture of the neck of the femur, with fracture of one or other, or of both trochanters.

8. Each variety is capable of uniting by bone.

9. In the intracapsular variety, the circumstance of the fracture being accompanied by impaction, materially increases the probability of the occurrence of osseous consolidation.

10. When osseous union occurs in this variety of fracture, the process of reparation is accomplished by the lower fragment principally.

11. In the intracapsular fracture, without impaction, the head of the humerus may perish for want of nutrition.

12. In such cases, disorganization of the joint may ensue, as the result of the processes, by which the elimination of the dead bone is accomplished.

13. In the intracapsular fracture, the head of the bone may become reversed in the articulation, and its cartilaginous surface be brought into contact with the broken surface of the lower fragment.

14. When this happens, the cartilage unites very imperfectly with the cancellated tissue of the inferior fragment.

15. In the intracapsular impacted fracture, the deformity is greater than in the extracapsular.

16. The diagnosis of extracapsular impacted fracture is most difficult. The evidence of its existence is chiefly of a negative character.

17. The most important diagnostic signs of the intracapsular impacted fracture are, shortening of the limb, approximation of the upper end of the shaft or tubercles to the acromion process, flattening of the shoulder, crepitus, and an impossibility of feeling the entire of the globular head of the bone.

18. Each variety of the impacted fracture unites with deformity.



19. In the intracapsular impacted fracture, the removal of the deformity would diminish the probability of the occurrence of osseous consolidation.

20. The chief diagnostic signs of the separation of the superior epiphysis of the humerus are, an abrupt projection beneath the coracoid process, caused by the upper end of the lower fragment, and the immediate recurrence of the deformity when the means employed for its reduction cease to be in operation.

21. There is no fracture incidental to the upper end of the humerus, in which it is more difficult to maintain the fragments in their proper relative position.

22. The supposition that, in this injury, the tubercles form a portion of the lower fragment, involves an anatomical error, the line of junction of the epiphysis with the shaft being below these processes (p. 206).

IV. *Fracture of the acromial extremity of the clavicle.*—1. When the clavicle is broken between the coraco-clavicular ligaments, there is seldom any displacement of either fragment, and always much less than in fracture of any other portion of the bone.

2. When displacement does occur, it is usually limited to a slight alteration in the direction of the bone, by which the natural convexity of this portion of the clavicle is increased.

3. In cases of fracture between the trapezoid ligament and the acromio-clavicular articulation, the displacement of the outer fragment is, in general, considerable, its inner extremity being drawn upwards.

4. This displacement is frequently carried to such an extent, that the fragments form a right angle with each other: and it is principally due to the action of the clavicular portion of the trapezius muscle.

5. The entire of the outer fragment is also generally drawn forwards and inwards, sometimes to such a degree as to bring the broken surface of the external into contact with the anterior margin of the internal fragment. The reticular structure of the former unites, in these cases, with the compact tissue of the latter.

6. The displacement of the outer fragment forwards and inwards, is owing to the revolution of the scapula upon its axis, and to the action of the muscles passing from the chest to the arm.

7. The derangement, as regards the thickness of the bone, is very slight, so that there can scarcely ever be any overlapping of the fragments.

8. In consequence of the displacement, as regards the direction of the bone, the clavicle is shortened in this injury.

9. In cases of fracture external to the conoid ligament, osseous matter is freely formed upon the under surface of either.

10. These osseous growths, occupying the situation of the coraco-clavicular ligaments, frequently assume a determinate form, and constitute a prop or buttress, which rests upon the root of the coracoid process. It is usually convex posteriorly, concave in front, and slightly notched inferiorly; in some cases it reaches down to the notch of the scapula.

11. In some rare instances, these osseous formations unite with the coracoid process, and ankylosis is thus established between the scapula and the clavicle.

12. In cases of fracture external to the trapezoid ligament, the amount of external deformity is seldom proportionate to the extent of the displacement of the outer fragment of the bone. (P. 222.) Vide the *Report on Surgery*, in the present Volume.

ART. 41.—*Differential Diagnosis between Congenital Dislocation of the Lower Maxilla. Accidental Dislocation of the same, and Chronic Rheumatism.*

By Dr. R.W. SMITH, Dublin.

(Liber citatus, p. 292.)

1. In the congenital luxation, the mouth can be freely opened and closed; in chronic rheumatism these motions can be performed, but not without uneasiness to the patient, an uneasiness which sometimes amounts to severe pain; in luxation from accident, the mouth cannot be closed.

2. An involuntary flow of saliva accompanies the accidental luxation alone,

although in some cases of chronic rheumatism there is an increased secretion of that fluid.

3. In congenital luxation, the teeth of the upper jaw project beyond those of the lower; the reverse is observed in accidental luxation, and in chronic rheumatism.

4. In congenital luxation there is no fulness in the cheek, such as the coronoid process produces in cases of accidental luxation, and the enlarged condyle in some instances of chronic rheumatic arthritis.

ART. 42.—*The Diagnostic Characters of Urethral Discharges simulating Gonorrhœa, and occurring accidentally in cases of Spermatorrhœa.* By H. J. M'DOUGALL.

(Preface to his Translation of *Lallemand's Treatise on Spermatorrhœa.*)

The symptoms are often almost as severe as those of virulent clap, and the discharge is attended with great irritation in the neighbourhood of the prostate, and frequent desire of micturition. It came on in one case of a married man, after taking a single tumbler of whisky-and-water at night—this gentleman not having been in the habit of taking spirits for several years, on account of continued ill health. The discharge is thicker than that of ordinary clap, and sticks in patches on the linen. These may be scaled off, after which there is little mark left, and the discharge seldom penetrates through calico, so that on the opposite side of the shirt there is little or no appearance of stain. On wetting the linen the discharge feels slippery, and it is washed off with difficulty. I am inclined to believe that these discharges are not contagious; but sexual intercourse should be avoided, on account of the injury that may result to the patient himself. In most cases, indeed, connexion is impossible during the first stages, on account of the painful chordee to which excitement gives rise. I have generally found that such discharges were connected, more or less, with deficiency of generative power. In the case I have above alluded to, impotence was almost complete; and in another, occurring in the person of a married surgeon, the powers had greatly declined. Both these patients were in the prime of life, and both had in their youth led very irregular lives.

The irritation, I am inclined to believe, is situated in the posterior part of the urethra. Indeed the surgeon I have just alluded to believed himself affected by enlarged prostate—many of the symptoms of which generally accompany the discharge I have described, especially frequent desire to pass water, and a feeling as though the bladder were never completely emptied, or as if two or three drops of urine were retained in the posterior part of the urethra.

In the treatment of these cases I have found the application of the solid nitrate of silver most effectual. The condition of the mucous membrane is immediately modified by it, and within twelve hours the patient experiences a degree of comfort to which, very frequently, he had long been a stranger.

This peculiar form of urethral discharge has hitherto, for the most part, I believe, been confounded with contagious clap; indeed, many members of our profession are in the habit of setting down all discharges from the urethra, indiscriminately, as the result of impure connexion, however positive the patient may be that such has not taken place. In all the cases I have hitherto met with, however, the patients have admitted that they had been previously affected with contagious clap—frequently on more than one occasion. The discharges I have described are, I am inclined to believe, by no means uncommon, and are certainly deserving the careful attention of the profession.

## SEC. II.—THE NATURE AND CAUSES OF SURGICAL DISEASES.

ART. 43.—*Acute Myringitis, or Inflammation of the Membrana Tympani.*  
By W. R. WILDE, Esq., Surgeon to St. Mark's Hospital, Dublin.

(*The Dublin Quarterly Journal*, Nov. 1847, p. 357, condensed.)

The physical signs consist, in the severe cases, of heat, pain, and slight

erysipelatous redness of the auricle. In very aggravated cases, heat, fulness, and œdema, as well as pain over the mastoid region. In ordinary cases, slight tumefaction of the lining of the external meatus, complete cessation of the ceruminous secretion, a bright pinkish colour, and a swelling and polish of the membrane lining the auditory canal, which is streaked with long tortuous vessels; accompanied by heat and itching of that part.

The membrana tympani first loses its polish, then its semi-transparency; becomes in the early stages, and in very mild cases, of a dull yellow, but this is variable, and seldom seen. The most usual colour varies through all the shades of red, from a slight pinkish hue to that of a dark damask rose tint, and is caused by the different degrees of vascularity produced by the greater or less intensity of the inflammation. Soemmering has faithfully represented the arteries of the tympanal membrane, in the normal condition, as two long vessels proceeding from above downwards and backwards, along the course of the handle of the hammer, and branching on either side into the anterior and posterior vibrating, thin portions of the membrane. During inflammatory action, however, like as in the coats of the eye, new vessels seem to start into existence, and to branch and inosculate till the whole seems one mass of bright or livid red. Generally speaking, the upper portion round the attachment of the head of the hammer is the first to become vascular, the last to regain the natural hue, and the part in which the colour becomes the deepest. The vessels along the handle of the hammer are always well marked, though the line of attachment of that bone remains for a long time whitish, owing to the intimate connexion of the membrane to it at this part. Around the circumference of the membrane, within the ligamentous ring, particularly at its lower and anterior part, an areola of short vessels forms a circle of almost a line in breadth. They all run towards the centre, and, when well marked, look like the zone seen in iritis, or, which is perhaps a better simile, the zone observed in the cornea in the commencement of cornitis, to which disease the appearances seen in myringitis bear a great resemblance. It is only in the early stages, or when the redness is disappearing, that this peculiar peripheral vascularity is well-marked. With this general redness may, in some cases, be seen well-defined patches of ecchymosis, generally on the anterior vibrating portion; and as the vascularity increases, even the exact position of the membrane cannot be recognised; all is one red mass. The membrane also becomes swollen, and its surface apparently villous; rarely vesicles, and still more rarely pustules and small abscesses, form on its surface. Ulcers occasionally form upon it. These usually occupy the anterior part of the lower vibrating portion; but I have occasionally seen them situated posteriorly. It is possible that they may have commenced as vesicles or pustules, but we require more extended and minute observations to determine this point. Exudation of muco-purulent secretion, with the detachment of the cuticle, both from the surface of the membrane and the parietes of the canal; perforation of the tympanal membrane, either by rupture, abscess, slough, or ulceration, but which it is not always easy to determine, also occur occasionally. The rupture usually takes place in the anterior portion, and close to the opening of the Eustachian tube; sometimes it may be seen as a round or oval hole, about the size of No. 8 shot, and appearing as if punched out of the membrane. In other instances, the rupture takes place at the inferior edge of the membrane; in which case the lower margin of the aperture is formed by the parietes of the canal and cavity of the tympanum. In still rarer instances, the rupture takes place in the posterior division of the membrane, below, and somewhat behind, the point or handle of the malleus.

Besides the peculiar vascular condition of the membrane already referred to, lymph is very frequently effused between the laminæ, in the substance of its proper fibrous tunic; and there can be little doubt that, in the severe forms of the disease, this morbid product is poured out in large quantity upon the surface of the tympanum, the membrane of which must partake largely of the inflammatory action so visible in the external septum. That these lymph exudations, both by thickening the tympanal membrane itself, and by acting in a similar manner upon the lining of the cavity of the tympanum and the parts contained within it, by bands of adhesion within its walls, thus drawing inward and arresting the vibrations of the membrana tympani, curtailing the motions of the ossicula, injuriously



affecting the membranes of the fenestræ, and particularly by impairing the functions of those tympanic branches of the glosso-pharyngeal nerves which ramify on the mucous membrane,—are the principal causes of deafness, I have little doubt.

When rupture takes place, and accumulations of blood, mucus, or purulent matter pent up within the tympanum are evacuated, relief is generally experienced.

In cases where neither rupture nor ulceration has taken place, as the disease advances, the vascularity of the tympanic membrane decreases, first, in the centre of its vibrating portion, then around its circumference, and, finally, along the malleolar attachment. The membrane assumes a muddy, yellowish, opaque colour; after this clears off, we find it opaque throughout, or in spots; sometimes these opacities can be plainly discovered upon the interior of the membrane, like the speckled opacities seen upon the membrane of the aqueous humour. In other cases, the result of inflammation is seen in the uniform grayish-white opacity, similar to leucoma of the cornea; and in time, as the superficial polish is restored, the membrane presents a pearly aspect, very different from the semi-transparent character of the healthy condition.

A not uncommon effect of inflammation of the tympanum and its membrane, particularly when allowed to run its course unchecked, is a drawing inward of the membrana tympani. In such cases the handle of the hammer forms the most projecting point seen at the bottom of the auditory canal; and the anterior and posterior divisions of the membrane can be distinctly seen forming deeply curved folds upon either side of it. At times the membrane can be elevated to its natural position by inflating the drum through the Eustachian tube; but in such cases, as soon as the pressure from within is removed, it immediately resumes its former position. Considerable discussion has occurred among authors as to the possibility of collapse, or falling inward, of the tympanic membrane, occurring from shocks or loud noises, &c. This is not the place for investigating that question; but of the existence of the pathological condition which I have thus described, and of its being sometimes the consequence of inflammatory action, I have no manner of doubt. It is a peculiarity I demonstrate to the class at the hospital daily. Mr. Toynbee's dissections confirm my observations on this point, and, in some instances, explain the cause, namely, adhesive bands, existing between the back of the membrane and the inner wall of the tympanum. [*These dissections are referred to in our Report on Surgery, Vol. V., p. 263.—H. A.*]

ART. 44.—*Chronic Myringitis.* By W. R. WILDE, Esq.

(*The Dublin Quarterly Journal*, Feb. 1848, p. 92; condensed.)

This disease presents under two forms: the first a perfectly painless deafness; the other attended by paroxysms of violent pain, coming on at intervals, between which the patient is perfectly free from all uneasiness. The latter is much more common among females from fifteen to thirty, and is at times accompanied by irregularities of the uterine functions. The appearance of the membrana tympani is too peculiar to be mistaken. It presents a general thickening and opacity, particularly of its lower portion; besides which, there is almost invariably a number of spots, about the size of pin-heads, of greater density than the rest, and of a pearly lustre, studded over the surface of the membrane. In many cases it presents the appearance of crumpled parchment. During the quiescent periods, we only remark a few straggling vessels, carrying red blood, spreading over the surface of the membrane, and for the most part, coursing from above downwards, parallel with the handle of the hammer. Upon any provocation, however, such as cold, or other exciting causes, the membrane will in a few hours, and often without any increase of pain, become of a uniform dark-red colour, precisely like *pannus* of the cornea—a disease of which it is the manifest analogue. The greater the amount of thickening and opacity, the less will be the quantity of vascularity and redness which the membrane is capable of assuming, as we perceive in cases of dense opacity of the cornea; owing no doubt, to the greater quantity of deposit obstructing the flow of red blood, by diminishing, and perhaps also obliterating, the calibre of the vessels.

Cases of this kind are often of many years' standing, and many have, I am con-

vinced, been treated as instances of "nervous deafness." . . . The membrana tympani will be found thickened, opaque, and slightly vascular, and sometimes very much collapsed, or drawn inwards towards the tympanum, so that the handle of the hammer forms a manifest projection. . . . It is acknowledged that several attacks of *carache* were suffered several years previously, and that such attacks were often preceded or accompanied by symptoms of catarrh.

[After describing a very interesting illustrative case, Mr. Wilde remarks:—

Our art at present does not offer much hope. The whole train of symptoms are evidently the result of slow chronic inflammation, affecting, in all probability, the lining of the cavity, as well as the membrane of the drum. The only means which can with safety be recommended at this period is the application of a solution of lunar caustic, applied with a camel's hair brush, every third or fourth day, upon the surface of the opaque membrane, while it is fully exposed to view; and should there be much vascularity present, the application of a few leeches, as far in as possible around the meatus, at least twice a week. In a few cases the *arnica* will assist to remove the tinnitus; but it is not so efficacious in this as in more recent forms of the affection.

ART. 45.—*Observations respecting the Origin and Growth of certain Concretions occurring in the Prostate Gland.* By C. HANDFIELD JONES, M. B., Cantab., Lecturer on Physiology at St. George's Hospital Medical School.

(*London Medical Gazette*, Aug. 20, 1847.)

The prostate gland is usually described as corresponding in structure to that class of conglomerate glands of which the salivary may be regarded as the type. In the salivary glands, the epithelium which fills their terminal vesicles is bulky, and of very fragile texture, often appearing to consist merely of aggregations of granular matter round nuclei. It differs entirely from that which lines the buccal cavity, which is well known as a perfect specimen of the scaly kind. Now, in the prostate cavities this distinction is not nearly so strongly marked; the whitish fluid, which flows, when the gland is compressed, into the prostatic sinus of the urethra, consists, in great part, of epithelial prisms, exactly the same as those of the adjacent portion of the urethra; and in the terminal cavities of the gland, so far as I can determine, the epithelium is still rather allied to the columnar form, than to the spheroidal or truly glandular; sometimes it even approaches closely to the scaly variety, the columns being very short, and the cells imperfectly developed. Moreover, in the great majority of instances, it is distinctly seen to line the cavities, and not to fill or occupy them completely, as that of the salivary vesicles does.

Another point of difference appears in the mode in which the terminal cavities of the prostate are disposed—not closely grouped together in lobules, as is the case in the salivary glands, but each for the most part invested; and separated from the adjacent ones by a quantity of connecting tissue. This intermediate tissue is disposed in fasciculi, which are closely woven together, and include spaces which are occupied by the glandular structure. It consists, principally, of the white fibrous element, but also contains numerous bands resembling closely those of organic muscle. In the enlarged prostate of old age, this tissue seems especially increased. Again, it may be observed, that in the salivary glands the efferent ducts are narrow, and bear but a small proportionate size to the groups of secreting vesicles which cluster round them on every side. In the prostate the terminal cavities are *smaller* than the efferent passages, and there is, as before stated, no marked distinction between them. These considerations furnish some grounds for regarding the prostate as rather an assemblage of mucous follicles than really a distinct conglomerate gland. Its part in the generative function is probably not to prepare any essential element of the fecundating fluid, but merely an appropriate viscid material; involved in which the seminal animalcules may be more securely transported on their destined route. I now proceed to describe certain remarkable formations which occur, I believe, solely in this gland.

In the cavities of the prostate there are frequently to be observed a number of minute concretions, having much the appearance, as M. Cruveilhier remarks, of brownish grains of sand. These are easily visible to the unaided eye; but micro-

scopic examination reveals some interesting circumstances relative to their origin and growth, as well as the fact, which would scarcely otherwise have been suspected, that they are almost of constant occurrence; not so often, perhaps, of the brownish-red tinge which makes them conspicuous amid the whitish glandular structure, but more nearly pale and colourless, yet having, in other respects, an exactly similar appearance.

In their earliest condition, these concretions appear in the form of a simple vesicle, having a single clearly-defined wall of homogeneous membrane, the cavity is either transparent, or occupied by a colourless, finely-mottled substance, and in the centre there is seen, sometimes, a nuclear corpuscle. The size of these varies. I have seen them as large as  $\frac{1}{250}$  in. diameter, but the majority are not much above  $\frac{1}{1000}$  in., and many are still smaller. Their form is usually oval or subcircular. In the next stage of their development the original dark envelope is still to be seen, while the contained amorphous matter is beginning to be arranged in concentric layers, as indicated by delicate curved lines, which run parallel to the envelope, and are most apparent near to it. As their growth proceeds, they usually attain a larger size, the interior concentric layers become more strongly marked, so as to be scarcely distinguishable, if at all, from the original envelope; their form, also, is frequently altered—in some instances, probably, from mutual pressure, so as to be very exactly triangular or quadrilateral. The central cavity still remains, and generally corresponds pretty accurately to the exterior contour. It contains often a yellowish or reddish-coloured granular material, which is sometimes perfectly opaque. This is not always deposited only in the central cavity, but more or less between the concentric layers, which are sometimes separated by it into two or more series. The size of the concretions, when they have attained to what may be considered their mature state, varies considerably; some are quite visible to the naked eye. The majority, however, probably average from  $\frac{1}{150}$  to  $\frac{1}{350}$  in. diameter. Many varieties may be perceived among them. The concentric layers may be more or less numerous nearer to the periphery or to the central cavity. They are not unfrequently replaced by radiating striæ, which run for a varying extent outward, and are crossed by one or more concentric rings; the appearance of some of these is extremely beautiful. Sometimes a tolerably large vesicle is seen to contain two smaller ones in its interior, both of which present the concentric laminated arrangement. It is not easy to determine positively whether the stages of growth which have been described as taking place in these structures are affected by the continual apposition of fresh matter to the outer wall, or by the dilatation of the vesicle, and successive deposits taking place in its interior: both methods are probably employed in various cases. The larger concretions, I think, receive increments of matter on their exterior, while the smaller seem clearly to increase in the endogenous manner, since the vesicles often attain a large size before the laminated deposit appears, the first faint traces of which may occasionally be seen in process of formation from the granular contents of the vesicle.

When the vesicles have attained their full development, they appear to undergo a kind of degeneration, or more properly, perhaps, to tend to dissolution. They lose their definite contour, become more or less shapeless and irregular; the concentric layers also become less distinct, and the granular contents either totally decolorized, or so much darkened in tint as to appear almost black. Many of the larger ones are seen to undergo disintegration by the formation of fissures, which run from the periphery towards the centre, and gradually break up the concretions into smaller fragments. Concretions in all these different states, from their first commencement to their final decay, may be frequently observed in the same gland. The situation which these structures occupy may be easily ascertained, if a thin section taken from the interior of the gland be examined by transmitted light. They are then seen lying in the follicular cavities, either in groups containing numerous small concretions, or as single ones, which are usually of large size. Such a view also frequently exhibits multitudes of concretions, colourless or semi-transparent, scattered throughout the granular tissue, which, to the naked eye, had presented no appearance that could have led to the supposition of their existence. Though I have described the course of development of the original simple vesicles until they attain what appears to be their mature or most perfect state, yet I am by no means satisfied that they are normally destined to pass into



such a condition. I think it is very probable that many of them undergo dissolution early, yielding up their granular or amorphous contents to form part of the secretion of the gland; and I am confirmed in this idea by having observed the simple vesicles to be more numerous and constant in their occurrence than those which exhibit the concentric laminated arrangement.

The chemical composition of these concretions must doubtless vary in the different stages of their development. At first they can scarcely consist of anything else than animal matter; subsequently, however, they acquire calcareous salts, and especially when they lose their definite form, and degenerate into an amorphous mass, their earthy constituents no doubt predominate. These are stated by Dr. Prout to be phosphate, with a little carbonate of lime. What is the nature of the colouring matter I am unable to state. Its presence is evidently not essential; it is unaffected by ether, liquor potassæ, or strong hyd. chl. acid; its tinge is deepest in those concretions which appear to be of long standing, and to remain permanently in the cavities of the gland.

I have not examined a sufficient number of cases to enable me to offer an opinion as to the causes influencing the production of these formations; only it has appeared to me that they are found so constantly, and in such numbers, in glands which bear no mark of being diseased, that I am rather inclined to regard them, while in a moderately developed state, as normal structures, contributing, perhaps, some element to the natural secretion of the gland. When, however, they grow immoderately, and assume a permanent existence, they then must, doubtless, be regarded as diseased products.

One remark, in conclusion, is suggested by the history of these curious formations, viz., that they appear to occupy an intermediate position between organic growths and inorganic concretions. To the former class they belong, by having their origin in a vesicle or cell, and by their growth taking place chiefly in the endogenous manner, by successive interior accretions. To the second they approximate by the triangular or quadrilateral shape which they often assume, their tendency to become infiltrated with earthy matters, and to pass into the state of a dead amorphous mass.

ART. 46.—*The Surgical Relations of Associated Muscular Motion.*

By J. P. VINCENT, Esq.

(*Excerpta from "Observations on some of the Parts of Surgical Practice."*)

1. In the combination of the moving parts of the machine, the variations that may take place in the least part will vary the whole. The change in the movement of a finger has really and strictly an influence upon the whole body. (p. 3.)

2. To preserve unity of purpose amidst a complexity of means, there must be a centre of motion, about which all the different systems are to move. The centre of motion is the centre of gravity. In man the centre of gravity is a moveable point, limited in the variation of its position between the pubis and sacrum. (p. 4.)

3. As almost all muscular actions are performed in reference to a centre, so, when this centre is lost to muscles as a bond of union of consentaneity, they, if they can find a new centre readily, go into a new combination of action, as conformably as can be with this new centre. This ability to adopt states of transition is, of course, the ability to be educated. (p. 5.)

4. All muscles are, for the most part, exercised in the *forward* movements of the body, and as very few people have much use of the muscles that act in a sideway motion, so when any one muscle is used in this forward motion, there are, by reason of the association of actions, many others called into action, to the injury, probably, of the case. When a patient is placed on his side, owing to the disuse of the muscles calculated for this kind of movement, the whole system of muscular action is more likely to be in repose, and has less chance of being excited by the laws of association. (p. 10.)

5. The relaxation of muscles is to be effected by attending to their position when they are required to throw out their strongest exertions; and not, as usually is supposed, by approximating their attachments. In dislocation of the foot backwards, the gastrocnemius has its lever of action increased in power as the foot

lies extended, by the heel projecting so much behind, which advantage, joined to that of its *habitual exertion when in this direction*, forms a very great opposition to the foot being brought to a flexed position; the surgeon will sensibly feel the cessation of its action the moment it is brought to a right angle with the axis of the tibia. This is owing to its being then in a state of least action in the usual exercise of its powers. (p. 11.)

6. The overpowering strength which a muscle is brought to exert, when its usual direction of action about a centre is forcibly changed, is another law of conditions of the utmost consequence to the surgeon. The dislocation of the patella on its edge is an example; the bone sets the extensors of the leg into action of the most violent kind. These muscles act most powerfully when the limb is to be straightened, and in the condition in question they act with a power which defies all the force that human aid can call to its service. Their force is also partly the effect of that irritation which all muscles get when they are thrown out of their ordinary line of action, particularly when they are disturbed in moving round their ordinary centre of motion. We have only to flex the leg a little, and all this powerful opposition to restoring the patella ceases upon using the slightest rotatory motion. (p. 13.)

7. The associated action of muscles is exhibited in *cramp*. If it occur in one muscle, as in the exterior of a joint, and the flexor of the same joint be put into strong action, the cramp ceases immediately. If the extensor pollicis proprius of the foot be the muscle affected, it is only to put into action, strongly, the flexor pollicis longus, by pressing the toe against some substance, when all cramp at once ceases. These two muscles are associated by reciprocity of action; and as the one motion is strongly called forth, the other gives way to the minimum of action. (p. 5.)

ART. 47.—*Origin of the Venereal Disease.* By M. RICORD.

(*The Lancet*, Oct. 23, 1847, p. 443.)

A question which has often been debated, and which is by no means solved, is the inquiry about the origin of the disease. No light has hitherto been thrown on the subject; and it may safely be asserted that the immense labours of Astruc, Sanches, Gittner, and many others, have had no satisfactory results. When we view the venereal disease as it now reigns, when we take into account the circumstances which surrounded the ancients, we must come to the conclusion that the disease has at all times existed. We find in the Scriptures descriptions of complaints which might very well be referred to blennorrhagia. Truly syphilitic affections, however, are not mentioned in them; but then, what are we to think of lepra?

Hippocrates speaks of an ulceration of the genital organs; Galen mentions the contagious nature of blennorrhagia; and Celsus gives a description of the different affections of the parts of generation. It must be confessed that the latter speaks neither of their causes nor diagnosis, but he overlooks these matters also in the description of other diseases. The Greeks, the Arabs (Avicenna, Aretæus, Albucasis), the physicians of Rome, have one and all given descriptions which cannot be mistaken. William de Salicet and Gordon give detailed accounts of ulceration of the genitals, and they attribute them to intercourse with women neglectful of cleanliness, and who abound in sanies (1467). Proceeding chronologically, we reach the famous epidemic of 1493-4. This was really a révolution of the disease, not only with reference to the study of the same, but with regard to the ravages it made at that period. The constitutional manifestations caused the local affection to be overlooked; all the mischief was attributed to the former, and they alone fixed the attention. At that time, then, the disease was looked upon as an inseparable whole. But these hasty views soon gave place to a calmer consideration of the subject, and the links which had been made to connect the heterogeneous parts of these affections, were broken asunder.

Alexander Benedict gave his contemporaries a glimpse into the origin of the syphilitic poison. Fernel studied its source, and the different accidents which may follow it. At last, John Hunter came, and laid the true foundation of the science of venereal affections. From Hunter's time until 1811-12-13 no advance

was made. At this time arose a violent opposition to the then existing doctrines, and it threatened to overthrow all that had been taught since 1493. According to the supporters of the new theory, specificity was an illusion: irritation and inflammation were to account for everything. These battles, however, soon vanished; the spirit of observation triumphed, and venereal diseases resumed their proper bearing. All varieties were placed under the same category, and from that time improvements went on steadily.

In order to appreciate the value of history, it must be remembered that the ancients, up to the famous epidemic, were acquainted with local symptoms. The only mistake they were making was, that among these local symptoms they did not distinguish the specific from the non-specific. But it has been asked, how did it happen that these ancients, being familiar with local appearances, did not hit upon the connexion existing between these and constitutional symptoms, or, in other words, the connexion between cause and effect? I answer to this, that they likewise overlooked the relation of simple wounds of the genital organs with the appearances arising from them in neighbouring parts, viz. the relation between epididymitis, blennorrhagia, or bubo, and a simple wound of the penis. Besides, it is very possible that the secondary symptoms, which we now regularly observe within a stated period, might have been much more tardy with them, so as to make the connexion pass unnoticed. Is not this very connexion forgotten in our own days, by men who daily come into contact with this disease? I may ask, moreover, whether it is proved that syphilis alone was concerned in the epidemic of 1493? Could not glanders, farcy, typhus, &c. &c., have had something to do with it? Did not the famine and misery caused by the wars of Charles V., the expulsion of the monks from Spain—did not all the disasters of those times contribute to the outbreak of that fearful epidemic?

When people came to be at a loss as to the origin of syphilis, they thought of ascribing it to unnatural connexion, to the influence of the stars, the heavenly wrath, the air, the water, even to anthropophagy, &c. &c.; but is it not more natural to believe that the epidemic spread under the agency of a cause which had rendered the human body more accessible to the general infection? Do we not every day see patients who, having become locally affected, surrounded by certain circumstances, affected in the same way as before, exhibit secondary accidents?

After this epidemic, the venereal disease became again what it had been before, now that the epidemical tendency was disappearing.

It is in the fifteenth century, too, that the American fable was invented. Sailors were said to have imported the disease from St. Domingo into Italy. Here we must notice that the faculty of inoculation must have been preserved during so long a voyage, and I do not think this at all probable. Besides, how can we imagine that a few men could, at the same time, have infected so many nations? Other circumstances were evidently necessary; and I do not hesitate to consider this as a mere story. But even if we were to admit that we are indebted to the Americans for the venereal disease, we should thereby only remove the limits of our inquiry still further. Could not the Americans ask us, or ask themselves, where *they* had it from. It is quite certain that the disease is not more innate in that country than in any other; and as for the elevated temperature which has been looked upon as one of the causes of the development of syphilis in America, it may be objected that the temperature of some parts of the eastern hemisphere is just as high. We all know that the Arabs successfully used mercury in skin diseases, and that, now-a-days, we cure with this metal only those cutaneous affections which have a syphilitic origin. Could we not hence infer that these diseases had a syphilitic nature?

This sad complaint has arisen wheresoever sexual intercourse took place: and Voltaire was quite right when he said, "It is with syphilis as with the fine arts, it grows, comes to perfection, and no one knows whence it came."—*Lectures delivered at the Hôpital du Midi.*

[South has some interesting quotations from the "Rosa Anglicana" of John of "Gatesden," better known as John of Gaddesden (1320); and John of Arden (1377). He remarks that he is not by any means sure that even syphilis, with



its primary sores, was not known to the latter. *Notes to Chelius*, vol. i. p. 163.—H. A.]

ART. 48.—*Syphilitic Myringitis, or Inflammation of the Membrana Tympani.* By J. R. WILDE, Esq.

(*The Dublin Quarterly Journal*, Feb. 1848, p. 106.)

[Although syphilitic affections of the organs of hearing have been noticed by authors, Mr. Wilde believes that no authority hitherto has mentioned this disease.]

The disease which I am about to describe is an inflammation of a specific character, occurring in the membranes of the tympanal cavity, but chiefly exhibited in the external membrane of the drum. All the cases I have seen of this affection occurred in young men, and generally those with fair complexions and blue eyes, who had had primary sores upon the genitals, from six to twelve months previously, which sores were rather of a deceptive character, so that mercury was seldom given in the first instance; at least in a legitimate form. These sores were usually tedious in healing, and followed by papular eruptions and sore throats, for which mercury was, in most of the cases, taken irregularly. Buboës were not a common attendant, nor had iritis ensued in any of the instances of well-marked venereal myringitis which fell under my notice; but copper-coloured blotches, fissures, and ulcers of the tongue, with loss of strength and slight nocturnal pains, generally speaking, existed previous to the aural affection, which should, I think, be ranked as a tertiary symptom. In four cases out of five of this disease which I witnessed last year, the disease appeared suddenly, as an eruption was fading off; in the fifth it came on at a later period, and was accompanied by loss of hair; in all it appeared in the upper or middle ranks of life. In some cases, there is at first a sensation of fulness in the head, and often vertigo upon stooping, or rising up suddenly, and the patients have usually a feeling of fulness within the ear; but in no instance have I seen it accompanied by acute pain, in which circumstances it resembles the subacute form of inflammation, already described at page 83, but upon inspection the amount of redness and vascularity will be found very much greater than the latter; and in this consists one of the chief characteristics of this disease, that while it is unaccompanied by local pain, as in the subacute inflammation, the membrana tympani will be found to present an amount of redness equal to, and sometimes exceeding, that seen in acute myringitis. The redness has generally, however, a brownish hue in the syphilitic form, which is not observable in that just alluded to. There is not, at first, much loss of polish, but in a short time the membrane assumes a fuzzy appearance. The auricle and meatus I have not seen affected more than in the subacute form; both ears are usually affected at the same time. The amount of deafness is usually very great, and is the symptom that first attracts the patient's attention, and it seldom varies. Tinnitus is not usually present, but in two cases which I possess the notes of, the deafness was ushered in by a very loud noise, which passed away after a few days. This inflammation does not end in mucous or muco-purulent discharge from the surface of the membrane, or the sides of the auditory canal; nor have I seen lymph effused upon the external surface of the membrane, as in the more violent and painful forms of otitis; but from the *brownish* red colour of the membrane in the early stage, from a yellow-speckled opacity, which is generally observable in it on the subsidence of the redness, and from the intense degree of thickening and opacity which were present in some cases, which were evidently the result of syphilitic myringitis, I am inclined to think that lymph is largely effused between the laminæ, or upon the inner surface of the membrana tympani. Two of the worst cases of deafness (not congenital) I ever saw, appeared to have been the result of syphilitic inflammation, and in both there were great thickening, opacity, and insensibility of the membrane. I am also inclined to think that syphilis has played a more extensive part in the production of deafness than the profession is at all aware of.

ART. 49.—*The Nature and Cause of Painful Crepitation of the Tendons.*

By M. VELPEAU.

The man whom you have just seen is a dyer by trade, æt. 49, and his case deserves notice. A week since he endeavoured to raise a load, having his left hand applied to his hip. He felt a violent pain in this arm, and now we may perceive a slight swelling at the lower and external part of the fore-arm, unaccompanied by any change of colour or fluctuation. Of a regular and elongated shape, it is only painful during motion, while, on applying the hand over it, we may perceive a fine, characteristic crepitation; and it is an example of the *painful crepitation of the tendons* which was vaguely indicated by Boyer and Desault, described by me first in 1825, and has since formed the subject of the special writings of several authors. I first met with it in a case in the hospital of Tours, where it was suspected to be a fracture of the radius. The affection is especially observed among washerwomen, mowers, blacksmiths, locksmiths, and joiners; and when it is seated in the foot, among soldiers, huntsmen, &c. Excessive friction is the condition necessary for its production. In the forearm and wrist, where it is especially met with, its recognition is very easy, the crepitation it gives rise to being quite pathognomonic, being neither like that felt in fractures, that of cartilage or emphysema, but which has been compared to the crepitation of starch, or of hoar-frost, such as is produced by walking in the snow. Its seat is evidently the sheath of the tendons, and it is probably due to a slight inflammation, first causing too great a dryness of the mucous membrane, and afterwards giving rise to effusion. It is generally in nowise serious, disappearing in a few days by rest alone, but it must not be absolutely neglected, for I have seen it in some cases give rise to a fungous transformation of the sheaths; and, indeed, there is no reason why all the changes which occur in diseases of the joints should not take place here. If there is much pain, we apply leeches and poultices, and the resolvent lotions and compression, but rest is indispensable.

*Gazette des Hôpitaux, and Medico-Chir. Review, Oct. 1847.*

ART. 50.—*The Cause of Eschars over the Sacrum.* By M. BLANDIN.—From the earliest period of his medical career, M. Blandin has always entertained most serious fears for patients in whom sloughing over the sacrum occurs; and, in his "Anatomie Chirurgicale," published in 1826, drew the attention of the profession to the almost sudden manner in which they often prove fatal. He believes he has discovered the explanation of this in the following circumstances. The point which suffers most from pressure in dorsal decubitus corresponds to where the sacrum is joined to the coccyx—exactly there, where the vertebral canal is only formed by the posterior sacro-coccygean ligament. Sphacelus in this way may easily reach the termination of the arachnoid membrane, and air, pus, or sanies, gain admission into its cavity, producing a violent inflammation, which at first attacks the nerves of the cauda equina. Necrosis, too, may open a way into the vertebral canal with the same results; and in both cases the phlegmasia which results induces the phenomena of paralysis of the rectum, the bladder, and the lower extremities. When M. Blandin made his earliest observations, he was in the medical wards, and the accident is of no unfrequent occurrence in typhoid fevers. In the patient who gave rise to these remarks (a case of amputation of the thigh, otherwise proceeding favourably) there were retention of urine and paraplegia.

*Medico-Chir. Review, Oct. 1847, from the Gazette des Hôpitaux, No. 71.*

ART. 51.—*Case of Aneurism of the Arteria Innominata spontaneously cured, with Obliteration of the Left Common Carotid Artery.*

By JAMES A. WISHART, M.A., Assistant-Surgeon, 15th Regiment.

(*Monthly Journ. of Med. Science, Jan. 1848.*)

William Martin, æt. 40, a labourer, married, of fair complexion, on the 8th of April, 1844, applied to Mr. Biddle, surgeon, at Edmondston. He complained of having caught a severe cold while at work, by which he had lost his voice. When Mr. Biddle heard him speak, it at once struck him that his tone of voice

was occasioned by pressure on some part of the windpipe. On placing his fingers over the clavicles, a most distinct murmur was perceived, extending also up the neck. Over the superior part of the sternum, a strong impulse, accompanied with a bruit, was felt, synchronous with the stroke of the heart. The pulse in the right wrist was barely perceptible. These symptoms indicated the existence of an aneurism. Along with it the man had acute bronchitis, for which he was more immediately treated. His loss of voice, cough, and dyspnoea still continuing, he was admitted into the Middlesex Hospital, on the 27th of June, and discharged at the beginning of August. When I first saw him, on the 17th of this month, his symptoms were great dyspnoea, suffocating cough, inability to raise his voice above a whisper, moist râles over both sides of the chest, a strong impulse felt over the top of the sternum, and the pulse of the right wrist not perceptible.

The treatment was directed towards the disease of the lungs, and he was kept on very low diet. He continued much in the above state for a month, after which he gradually improved. He was strictly confined to the house, and took small doses of acetate of lead daily for several weeks. I visited him occasionally till the end of the year. There was then only a very slight impulse to be felt over the sternum. He had had for some time back repeated attacks of hæmoptysis, connected with the state of the lungs, which were then in an advanced stage of phthisis. He lingered on in much the same condition till the middle of February, 1845, when he became worse, and died on the 21st. A month before his death, no pulse could be felt in either of the carotids; for how long previous to that time it was absent, I could not say. *On opening the body*, thirty-six hours after death, both lungs were found full of tuberculous cavities. The aneurism was carefully dissected out and removed. It involved the whole of the arteria innominata. On laying open the aorta, the aneurism was found spontaneously cured, the innominata being entirely obliterated. The aneurism was considerably larger than a duck's egg. The tunics of the vessel were dilated in all directions into an oval pouch, which was completely and accurately filled by compact fibrine, deposited layer after layer, in such a manner as to fill the interior to the level of the aorta. The orifice of the innominata was dilated at this part to the diameter of a crown-piece, and the arch of the aorta was also somewhat expanded, in the coats of which there was an extensive deposit of atheromatous matter. The fibrine occupied a small extent of the interior of the aorta, so as completely to cover up the orifice of the carotid artery. This vessel, with the right carotid and subclavian, was entirely blocked up, and the circulation to the brain could only have existed in any considerable stream through the left vertebral artery, both it and the subclavian being somewhat enlarged in calibre. The circulation to the right superior extremity must have been carried on principally by anastomosis between the branches of the thyroid axis and vertebral arteries of the left with those of the right side. The right common carotid artery was slightly contracted, and filled with fibrine for about four inches above the aneurism. The right subclavian, and the branches of the thyroid axis, vertebral artery, &c., were pervious, and of their usual calibre. The aneurismal tumour adhered firmly to the front and right side of the trachea, on which it pressed, and slightly diminished its size; the mucous membrane of this part of the tube was of a reddish-brown colour, and a few points about the size of pins' heads were raised, as if at one time the aneurism had showed a disposition to burst into the trachea. The pneumogastric nerve adhered closely to the coats of the sac in front, and was considerably stretched.

The preparation is in the museum of the medical department at Chatham.

It will be observed that this man was kept on very low diet for a period of nearly six months, during which time he never left his room, and was principally confined to bed. It is probable that these circumstances, constituting pretty nearly the treatment of Valsalva, had great effect in producing the obliteration.—(Vide *Report on Surgery* in the present Volume.)



ART. 52.—*Case of Enormous Enlargement of the Left Mamma, by W. E. IMAGE, F.R.C.S.; with an Anatomical and Pathological Description of the Tumour, by Dr. T. G. HAKE and W. E. IMAGE.*

[*Medico-Chir. Transactions*, 1847; condensed.]

Sarah Harvey, æt. 21. *Previous history*.—About two years since, for the first time, she observed a red mark, about the size of a shilling, just above the nipple, and that the breast was enlarged; it was painless, even under pressure. She had not observed the enlargement of the breast until the red patch attracted her notice; the catamenia were natural. She continued for two months after this time free from any pain. As soon as it became painful, leeches and cold lotion were employed. The breast continued gradually to enlarge, the pain remaining the same: which, however, was not severe. Iodine was also employed fully, but ineffectually.

She remembered having struck her breast some time since with a pump handle, but did not suffer from the blow at the time; and she did not connect the accident in any way with her present disease. In fact, she was unable to remember whether the breast had begun at that time to enlarge.

*Actual state, April 15th, 1845*.—Breast pendulous: there is a blue, nævus-like spot just above the nipple, about the size of a half-crown piece, and several smaller ones of the same description in its vicinity. A general bluish or slate-colour characterizes the entire surface of the breast. The skin itself, except in the places above mentioned, is normal, and its leaden hue disappears during pressure. The diseased mass measures around its base *fifteen inches*; vertically across, *nine inches*; horizontally across, *eleven inches*. By gradual pressure it admits of being reduced to at least one half its bulk. The veins appear enlarged. There is no pulsation, no murmur. When the tumour is reduced by pressure, the patient complains of fulness and heaviness in her head; and on the pressure being withdrawn, pallor and faintness supervene: these manipulations are productive of scarcely any pain. The patient has the fresh and healthy appearance of a country girl; the catamenia are regular and natural, and no difference is experienced in the breast at the menstrual epoch: with the exception of occasional faintness of an alarming kind, and deep mental depression, the constitution is healthy.

The treatment employed was pressure by an air-cushion, within a metallic hemisphere, so as to bear equally upon every part of the breast. The plan was continued three months, but no advantage resulted. The pressure afforded a feeling of support to the part; on its withdrawal the mamma quickly became distended again, and great faintness invariably followed the return of blood to the tumour. Meantime, in spite of the diminution of bulk by pressure, the disease itself actually advanced, and in September, five months after admission, presented the following appearances. The patches of discoloration, previously described, had enlarged and become blended, new detached spots had appeared, and the nævus-like discoloration had attained to at least six or seven times its former size, as represented in the plate. This morbid superficies presented an irregular form, consisting of conjoined patches and isolated spots, having the character of nævus. The parts originally red had become purple, and those newly developed were red. The nipple had become almost obliterated, and the areola was obscured by the invasion of the morbid process. The spot primarily affected had become the seat of venous dilatation, so conspicuous as to form a prominent feature, and its outer tegument was so attenuated as to excite fear of its speedy rupture.

[After consultation with several surgeons, the following operation was agreed upon for its removal.]

To place the patient in a recumbent position, to make a vertical incision on either side of the enlarged mass, and, as far as the healthy skin would permit, to dissect back two flaps, securing the bleeding vessels as the operation proceeded; to pass two very long and strong needles, firmly fixed in handles through the base, so as to meet each other at right angles in the centre of the base of the tumour; and having armed them with double ligatures, to return them. The needles being detached, the ends of the ligatures, eight in number, were to be firmly tied, and the tumour was thus to be strangulated.

*Sept. 25th.*—The tumour now projected seven inches from the chest, and measured twenty-three inches around its base, thirteen inches vertically across, and fifteen inches horizontally across. It was evident that it was daily increasing; and the menstrual period having just passed away, I determined to operate speedily. There was at this time a very distinct thrill communicated from the heart.

The operation lasted twenty minutes; during the latter part of which she was faint, having lost about 14 oz. of blood, and it was evident the shock was severe during the time the ligatures were tightened. She vomited soon after she had reached her bed, and the pulse was scarcely perceptible; after a short time, however, she rallied a little. Stimulants, mixed with gruel, as well as opiates in a liquid form, were administered from time to time, but were not retained, as the vomiting returned. There was now considerable oozing of venous blood, particularly from the inferior portion of the wound, through which one of the ligatures had passed. It was arrested by gallic acid and pressure. Opium and beef-tea were administered by the rectum.

*Sept. 26th.* Passed a sleepless night. The vomiting still continued, as well as some degree of venous oozing. The pulse was rapid and small, with other symptoms of collapse, the result of shock and loss of blood. The total loss of blood amounted to about 30 or 36 oz. She sank at half past 10 A. M., twenty-two hours after the operation.

*Description of the tumour.*—A horizontal section of the mamma, through the nipple down to the base having been made, an appearance presented itself which was calculated to mask rather than reveal the nature of the disease. It is to be recollected that the ligatures used in the operation, when drawn tight, had the effect of compressing the blood within the vessels of the mamma, and of causing it to stagnate there. The tumour thus strangulated had been cut off from the circulation for a period of twenty-two hours, and had remained for a like period after death before it was dissected. The appearances, therefore, on a section being made, were those of strongly-marked congestion, caused by the operation. In the midst, however, of this artificial condition of the tumour, there existed traces of structure both healthy and morbid.

The skin was unaltered in structure, except in the places already described, where the disease was visible externally.

The adipose tissue and fibrous laminae, situated between the skin and glandular substance, were compressed together, on the anterior aspect of the breast, into a dense tough membrane, in which there was an almost total absence of the fatty matter. At and around its base, however, the fibrous tissue was natural, except where perforated by dilated veins; and was intermixed with adipose tissue in the usual manner, underneath the skin which surrounded the base of the organ.

The lactiferous ducts were observed passing from the glandular structure, through the parts in front towards the nipple, but were lost in the condensed tissue before reaching it.

Vestiges of gland, varying in size from that of a millet-seed to an almond, were scattered over the exposed surface.

Besides the venous apertures already alluded to, there existed in the fibrous tissue at the base of the organ, where the dilated veins penetrated, certain cells of considerable size, which were the result of the operation, as will be shown presently. Within these false cells, blood was found, in a semiliquid state, and resembling currant jelly; and connected to their walls were seen the torn remains of lactiferous ducts and glandular substance.

The arteries and nerves of the mamma were unaltered.

The absorbents were not examined, but there was no evidence of their enlargement. The capillary vessels could not be injected.

The internal mammary vein, towards its junction with the subclavian, presented an irregular and sacculated appearance. Immediately in advance of each sacculated portion, in the direction of the heart, the vein was narrowed.

The interior of the sacculated portion of the vein was found to present a valve-like formation; the narrow parts were thickened, and the sacculated parts were formed of one hollow within another.

The superficial veins were dilated uniformly into large sinuses.

The mammary veins, internal and external, were traceable backwards into a cellulated structure, to be described presently.

All the preceding facts were visible to the eye without assistance; what follows was discovered by the aid of the microscope.

In whatever part of the mammary organ a section was made, and examined under water through the microscope, with a low power, the apparently uniform and glistening surface was resolved into cells. These cells were of various sizes; and within the greater, lesser ones were visible. Into these cells, all the veins of the organ were traceable; indeed, no vein was found to have any other origin, so that the cellulated structure of the tumour was essentially venous, consisting, in fact, of the veins situated between the capillaries and vein-trunks, in a state of distension. The rupture of these cells, from pressure of blood under the ligatures during the operation, produced those large false cells already described as containing blood, pendulous fragments of lactiferous ducts, and their attached glandular substance.

The dilatation of the more minute venous structure of the organ into cells was a medium through which every tissue may be said to have become preternaturally, though uniformly, separated and distended. The effect of this was very evident in the fibrous as well as the glandular structures, which are intimately associated in the breast. By the increase of bulk to which this cell-formation gave rise in the organ, the lobes of the gland were separated further apart, and these, in their turn, were subdivided into isolated lobules.

The distending force had likewise produced its characteristic effect on the fibrous structure of the organ, the tissue in question being known to involve the gland and its parts. In health, the fibres of this tissue are parallel and closely united; but when examined in the present instance, they were found to have given way to the dilated veins. Their texture was completely altered, being converted, in some places, into a kind of network, through which the vein-cells passed. The process of formation of this cellulo-fibrous tissue may be thus described. In the first instance, the fibres are so slightly separated as to be only no longer parallel; they are then perforated by venous cells at intervals; and finally are separated so completely as to appear cellular.

Such were the effects, doubtless, of the formation of venous cells, itself caused by the force of the blood acting gradually and during a considerable period of time upon the venous system, the free passage through which was choked up near the junction of the left internal mammary vein with the subclavian. *The slight disproportion between the arterial and venous circulation, resulting from the narrowed condition of the internal mammary vein, was the evident cause of the fatal disease which ensued.* There was more blood supplied by the arterial, than could be carried off by the venous system of the mamma; hence its accumulation, and the adaptation of structure to this new condition of the circulation.

The disease above described, caused probably by the effects of a blow on the trunk-vein of the left mamma, is unique, and may not occur again for a considerable time.

### SECT. III.—TREATMENT OF SURGICAL DISEASES.

ART. 53.—*The Treatment of Acute Myringitis.* By W. R. WILDE, Esq.  
(*The Dublin Quarterly Journal*, Nov. 1847, p. 403; condensed.)

Counter-irritation, by means of small blisters, applied upon the bald space behind the auricle and below the lobe, is advantageous in the more advanced stages of the disease, and after local depletion, has been fully employed. Generally speaking, blisters are too much relied upon, or applied too early in the disease; but as it advances, they will be found highly useful, and the surfaces which they expose may, with advantage, be dressed with mercurial ointment.

Having resorted to all these means, we should, if the symptoms—not only of pain and deafness, but of the redness and vascularity of the tympanic membrane—remain unrelieved, at once have recourse to the use of mercury. Indeed, I am now so fully convinced not only of the utility but of the urgent necessity of



employing mercury in these aural inflammations, that I do not hesitate to recommend its use in the early stages of all such affections. Not only should the gums be touched, but the patient should be kept under its influence for some days, in order to insure an ultimate beneficial result.

The temperature, in cases of acute myringitis, should be strictly attended to; the patient should, if possible, be confined to a warm, well-ventilated apartment, or, if obliged to go abroad, the cold air should be carefully excluded from the ear; but in the severe form of the disease, it is absolutely necessary to confine the patient to bed.

Depletion is strictly enjoined; but I have seldom found it necessary to resort to general bleeding. Local depletion is imperatively required, either by cupping or by leeches; the former is not easily managed so near the part affected as to be of much service. In cases, however, of very severe internal otitis, it may be had recourse to, and a dexterous cupper will abstract several ounces of blood from the soft parts immediately behind and beneath the mastoid process; and if the head be much engorged, blood may be abstracted by the same means from the nape of the neck. Leeches are, however, the most effectual means of abstracting blood and retarding pain in all such cases. They should not, however, be applied in the usual manner behind the mastoid process; to be of much service, they must be applied with a leech-glass, immediately around and within the external meatus, in the fossa behind the tragus, and, if necessary, in front of that prominence, in the hollow formed by depressing the jaw. From four to six leeches may be readily applied around the meatus, and in this situation they will produce more permanent and immediate relief than three times the number affixed over the mastoid region. The application in front of the tragus is also very much more effectual than upon the mastoid region. When, however, the latter locality becomes itself the seat of inflammatory action, they should also be applied freely all over it. Where we have already recently applied leeches in the two first-mentioned localities, and that the parts have thereby become swollen and irritated, the next most advantageous position is beneath the lobe of the auricle, behind the ramus of the jaw. I do not know any painful affection in which leeches applied in the manner directed produce the same amount of immediate relief as the disease under consideration. They should be had recourse to again and again, even upon the same day, to relieve paroxysms of pain, as well as to lessen the degree of redness and vascularity observable.

The application of heat and moisture is particularly grateful in such cases; steaming the ear, by holding it over the vapour of some very hot water placed in the bottom of a long, narrow vessel, medicated with hyoscyamus, opium, belladonna, or with the ordinary decoction of marsh-mallows, chamomile, or poppy-heads, if faith be placed in such, gives great comfort. The Russians employ a peculiar apparatus for relieving pain in the ear, consisting of a funnel-shaped roll of linen, the small end of which is applied to the meatus, while the large end, in which various balsamic substances are placed and set fire to, is allowed to burn down slowly like a moxa. A warm linseed-meal poultice, renewed every two or three hours, and particularly applied at bedtime, gives great relief. Stupes and fomentations are not, I find, as efficacious in aural as in ophthalmic inflammations.

The bowels should in this, as in all other febrile diseases, be opened; but the condition of the digestive organs does not appear to influence the inflammatory affections of the ear as much as they do those of the eye. The state of the skin, however, which is generally hot and dry, requires our more especial attention; and sudorifics are, in the early stage of the disease, decidedly indicated. Having leeches, fomented, and, if necessary, purged, James's powder, combined with small doses of blue pill and henbane, will be found very efficacious. Abstinence from animal food, and the use of the pediluvium, together with all such means as are calculated to allay inflammation and febrile excitement, should be had recourse to.

In the subsequent management of the disease, the iodide and bromide of potassium, or very minute doses of the bichloride of mercury, in some of the preparations of bark, will certainly hasten the cure, as well as promote absorption of the deposits and adhesions. The treatment of the tinnitus which remains shall be considered under the head of the chronic form of the disease.

Under no circumstances should we pour any stimulating or sedative liquors into the ear. The state of the part should be examined with a speculum daily, or oftener if necessary; and then, should we discover an ulcer, it may be touched with a solution of nitrate of silver, applied upon a fine camel's hair-pencil. If otorrhœa has occurred, either from mucous discharge or from the external surface of the tympanal membrane and the auditory canal, or owing to pus or mucus escaping from the middle ear through an aperture in the membrana tympani, or from an abscess occurring in the walls of the external auditory canal, we should remove the discharge by very gently syringing the part with simple warm water, or the most bland unirritating fluids; but during the high inflammatory process no astringent injections whatever should be employed.

Should the mastoid process, or the parts covering it, become engaged, and that the methods already recommended fail to give relief, or that even an indistinct sense of fluctuation can be discovered, we should not long hesitate to make a free incision in the periosteum there, at least an inch in length. In performing this operation, the head should be firmly secured, and supported against some unyielding substance, as the back of a high chair, or the breast of an assistant. A stout scalpel is the best instrument to employ. It should be grasped so that the forefinger and thumb may come down upon the blade, so as to leave about an inch of it uncovered. It should be inserted steadily till the point reaches the bone, which it should be made to traverse, for the full length of the incision. By this means we secure complete division of the periosteum. With regard to the line of the incision, circumstances may require its being made in other directions; but I find that it is most generally required parallel with, and about an inch from, the attachment of the auricle. The knife should be drawn upwards, and from the swollen state of the parts, the depth which we are sometimes obliged to introduce the instrument is often nearly an inch. The hemorrhage (unless we wish to extract blood), may be arrested by placing a dossil of lint within the incision. The cut surfaces generally present the brown-like appearance seen in phlegmonoid erysipelas. Although pus may not have been reached by the incision, still immediate relief is almost invariably experienced. The subsequent management of this particular part of such a case must depend upon the circumstances of exfoliation, &c. The treatment of the chronic form of the disease shall be considered in the subsequent part of this communication.

ART. 54.—*The Treatment of Pes Equinus. Successful Operation by the late Professor DIEFFENBACH.*

(In a letter to the Editor of the Medical Times, Dec. 4, 1847; from Dr. BUSHNAN.)

[After remarking that neither simple orthopedic treatment is of itself capable of relieving deformities, nor that these are to be cured by a species of sleight of hand, and that the professor combined mechanical manipulation with the use of instruments and the section of muscles and tendons, in one happy whole, assigning to each its proper place in the treatment, Dr. Bushnan states that he has witnessed the most effectual cures of club-foot of every description—contractions of the knee, hip and elbow-joints, at obtuse or acute angles; in fact, of every degree of contraction, from that of a toe which merely impeded the proper adjustment of a boot, to that of the principal limbs, interfering with their motion, and producing unsightly deformities;—that it was one of Dieffenbach's greatest qualities to individualize quickly, and even during an operation; that it is not this or that tendon to be divided in any given contraction, and according to a certain theory, but that it is now this and now that—now more and now less, and always as little as possible; that Dieffenbach was never tempted, like some surgeons, by a love of display; never forcing the limbs immediately into their position, so as to astonish a class by a kind of miraculous conjuring, but, on the contrary, he allowed, in many cases, days to elapse before he commenced the orthopedic treatment, further than that of a slight enveloping bandage; the reason being that the matter deposited between the cut extremities of tendons possesses great elastic power, and it is only when the divided tendons are so reunited that the parts are in a condition to be subjected to the necessary extension. The following cases are described:]

CASE I. Fedor W., son of a baker, at Furstenwalde, was born with pes equinus

of the fourth degree. In his early years he had crept on all-fours, and all endeavours to make him walk were frustrated by the position of his feet, which were in straight lines with his legs. As he advanced in life he learned to walk upon crutches. At nine years old he was brought to Dieffenbach. At that time the deformity was threatening to advance into the fifth degree; the instep was yielding, and becoming altogether everted; it would soon have formed a sole for the foot. The distal extremities of the metatarsal bones were turned backwards, and rested on the ground; the toes were turned upwards, and the sole was concave, corresponding with the convexity of the dorsum. The heel was retracted, and the muscles of the leg shrunk and withered. The thigh was very thin, and the pectinei muscles rigid from excessive extension. He walked as on stilts, leaning his whole weight on his crutches, and bending forwards.

The operation consisted of the subcutaneous division of the tendo Achilles. The limbs were then lightly enveloped in bandages, and after a few days laid in Stromeyer's machine, and gradual extension had recourse to. In fourteen days after the operation the feet were at obtuse angles with the legs, and in two months they had acquired their natural position. The boy could now put the soles of his feet to the ground; but the limbs were still weak, and he could not stand upright without pain. The abduction of the thighs was greatly impeded by the rigidity of the pectinei muscles; these were, therefore, divided, and then free motion was established. The necessary orthopedic treatment was carefully pursued, and the boy was soon able to throw away his crutches, to walk alone, and without deformity.

CASE 2. Marie K., æt. 14. Pes equinus on the right side. The foot formed one straight line with the shin; its form was altogether destroyed, and consisted of a shapeless mass. The tendo Achilles and flexor pollicis were divided. After a few days, orthopedic treatment was resorted to, and the foot soon assumed a better form. In six weeks the cure was effected.

#### ART. 55.—*The Treatment of Hemorrhage.* By J. P. VINCENT.

(*Observations on some of the Parts of Surgical Practice*, 1847; p. 217.)

The most important step in managing all cases of bleeding is, that the surgeon should be most careful to keep the bleeding vessel free from all coagulum. The smallest arteries will go on bleeding if they are covered with a clot, and many considerable hemorrhages will stop if the bleeding points are quite clear from all blood; even rather large arteries will sometimes permanently cease to bleed, if kept uncovered and exposed to the air. This fact I have seen. It is known that if a divided artery be in contact with a layer of fibrine, it has a strong affinity and aptitude to shoot into it; and it is possible that a clot of coagulum has a modified effect of this sort upon the orifice of an artery, so as to keep it from contracting and closing. It is, however, certain that a coagulum over a bleeding artery keeps up hemorrhage. It is by this means that all styptics have generally failed, while, for the most part, they have only done what bare exposure will generally effect; if the blood be carefully removed, and the styptic be applied, it has the credit of supporting its character, but generally, if the blood be removed and kept from forming a coagulum, the vessels will cease bleeding, as the effect of the mere exposure of the part. The doctrine explaining the use of plugs of coagulum about an artery to restrain its bleeding, was never to me very convincing. I know, practically, that arteries of a considerable size, such as those about the hand, of the size even of the radial, will cease to bleed if left quite exposed, and kept freed from a coagulum taking place about them; so, when a socket of the tooth bleeds, if it be kept quite clear of coagulum, and the oil of turpentine be applied, it will succeed in quickly arresting the bleeding. I have every reason to feel assured, from what I have tried in these cases, that the bleeding may be stopped in epistaxis upon these principles, by which the patient may be saved from the annoyance of what is called plugging. The plan of the proceeding that I have adopted is to keep the parts which are bleeding freed from all coagulum, and this should be done in this case by syringing the nostrils, so as to wash the blood out. Now, if a styptic be used, such as the sulphate of zinc, it coagulates the blood as it issues from the vessels, and so far stops the bleeding; but there is a process going on,



by which this clot is loosened from its adhesion, and perhaps on the second day, the bleeding is renewed. This will happen repeatedly; so that these cases have ended by being plugged. But what I contend for is, that if the syringing be carried on until the bleeding ceases, it will not only stop, but not recur. It is generally considered of importance that the water used in cases of bleeding should be cold, but from what I have observed, arteries will contract under the use of warm water, which has a better effect in clearing away the clots, and keeping the parts clean from the blood. I have already alluded to the influence of a coagulum in keeping up bleeding, when speaking of the necessity of squeezing out the coagulum in a pile when it is opened.

[The novelty of Mr. Vincent's views will strike every reader; we must confess, that were they from a less experienced surgeon, we should hesitate in extracting them. The application of cold, in particular, has been admitted universally as a means of arresting hemorrhage: plugging and promoting the formation of a coagulum has also been very generally taught and practised. Malgaigne, we observe, treats of hemorrhage as capillary, venous, and arterial. (Operative Surgery.) In the first, he recommends the removal of clots, exposure to air, and the application of cold; in venous hemorrhage, compression of the part, so that a clot may form; and he gives sixteen plans resorted to by surgeons for the arrest of hemorrhage from the open mouths of arteries.—H. A.]

ART. 56.—*Luxation of the Transverse Apophysis of the Fourth Cervical Vertebra reduced on the Seventh Day; with some Considerations on Luxations of the Vertebra in general.* By Dr. SCHRAUTH.

(*Archiv. für Physiolog. Heilkunde*, and various French and English Journals.)

CASE.—J. St. B. de B., æt. 25, a weaver, was seized on the night of the 26th of February, 1843, by two vigorous men, for the purpose of throwing him out of the door. B., suspended in the air by his two adversaries, put his hands on the jambs of the door; then one of them taking him by the head and neck, and the other by the trunk, they threw him against the wall of the landing-place. B., on getting up, immediately complained of a severe pain in the neck, saying—"They must have torn a piece of flesh from my neck," and he could no longer stir his head. A barber, who was consulted the next day, rubbed it with an ointment; but as the stiffness remained the same, and the pain increased, B. went, on the 28th of November, to Dr. T., the distance of a league. To relieve the pain in the neck, he was ordered repose, abstinence, bleeding, leeching, cold fomentations, and a saline purgative. In spite of the prohibition of the doctor, the patient returned on foot, although, on his arrival, he was worn out with fatigue, on the point of fainting, and covered with a cold sweat. Dr. T. went on the following day to the patient, and continued the antiphlogistic treatment; but as the state of the patient was still the same, on the 2d of December he made his report to the authorities. The author of this memoir, on the 3d, found the patient lying on the bed, his head turned to the left; he was hoarse, spoke with difficulty, was sensible, and complained of a pain in the nape, and a swelling in the left arm; he was of a middle size; of a phthisical habit; the muscles flaccid and soft; the neck long and thin; face pale; eyes haggard; the head immovable, like a statue, turned to the left, and a little bent forward. He could incline the head a little forwards, but every other movement was impossible; the larynx was not too prominent, during deglutition, which was easy in other respects; he experienced a sense of swelling in the pharynx. Examined from behind, the head and shoulders were bent forwards a little, the shoulder-blades projecting, and the vertebral column much sunken, and a little turned to the left. When the arms were stretched upwards and forwards, the vertebral column appeared straight, with the exception of the neck, which was bent to the left and forwards.

On pressing on the shoulders, the patient felt a severe pain from the sixth to the second cervical vertebra, and a less severe one from the third to the eighth dorsal vertebra; but this latter, he says, came on later, and was propagated from above downwards. Slight tumefaction and ecchymosis of the skin, caused by leech-bites, covering the third, fourth and fifth dorsal vertebrae. The spinous apophyses of the dorsal vertebrae were arranged in a normal right line; but the spinous pro-

cess of the fourth cervical vertebræ was a little turned to the right and sunk—that is to say, pushed forwards. As the patient was very thin, the transverse processes of the cervical vertebræ could distinctly be felt; the fourth was painful, and projecting to the right. The neck was visibly a little bent to the right. No unusual tension of the muscles of the neck; no symptoms of spinal irritation; pulse hard and quick; no appetite; great weakness.

*Diagnosis.*—Luxation of the fourth vertebra on the fifth in the articulation of their right transverse apophyses, with rupture of the ligaments of that articulation; stiffness of the neck, without lesion of the spinal marrow.

*Prognosis.*—Very unfavourable; for if the patient were abandoned, then would come on either inflammation, paralysis, marasmus, or at best, a permanent stiffness of the neck, and on attempting reduction, he would run the risk of the greatest danger. Notwithstanding, reduction was decided upon, which was performed with the greatest caution. An assistant pressed on the shoulders of the patient, who was seated in a chair; another pulled the head upwards, whilst M. Schrauth applied his thumb under the right side of the neck, and pushed the projecting part backwards and upwards. The patient felt his pains diminish during the traction exercised on the head.

Encouraged by the first result, the patient was made to sit on the ground; two strong cravats, passed under his chin, and knotted separately at each side above the ears, were confided to two assistants: another cravat applied to the nape, and twisted in front of the forehead, was given to a third assistant. These three men drew the head directly upwards; a fourth assistant, seated behind the patient, seizing his trunk and shoulders, made counter-extension by leaning with all his weight. Dr. T. was charged with pushing onwards and backwards the right transverse apophysis which projected, and then M. Schrauth, seizing the head with his hands, directed the movements.

The patient held M. Schrauth with his right hand to warn him when he ought to stop the tractions; the stronger they were, the more ease they produced. Whilst they continued thus pulling gently and prudently, they made slight movements forwards and backwards, to the right and left; then they gave the neck a slight turn on its axis. During these manœuvres, which were frequently interrupted, various distinct cracklings in the neck were heard: these movements became easier by degrees, without being followed by accidents. The patient then held his neck straight without pain. After some instants of repose, M. Schrauth seized, without employing much force, the head between his hands, the body being sustained, and repeated the movements so easily, that the patient himself soon executed them alone. He could lower the chin as far as the chest, raise the face to see a nail in the ceiling, and turn the head from side to side, so as to see his shoulders. The sinking of the spinous apophysis, and the projection of the transverse apophysis of the fourth vertebra, had disappeared. The success of the reduction appeared proved. B. was put to bed without bandaging; they prescribed Glauber salts with nitre, a large bleeding, twenty leeches, and cold fomentations on the neck and upper part of the back.

Dec. 4th. Pains in the neck and back; diminution of the swelling of the left arm; sleeplessness; little thirst; pulse quick.

5th. The pains less; slept for three hours; complete cessation of the swelling; the lymphatic glands of the neck and armpit swelled; pulse soft and slower.

6th. Swelling of the glands more pronounced; the cold compresses replaced by warm applications.

After some days of repose, the patient could resume his occupation without stiffness in the movements of the neck.

[The details of this interesting observation appear to us sufficient to prove the truth of the diagnosis of this luxation, which could neither be confounded with a fracture nor with a severe contusion, and we do not think it necessary to follow the author in his long anatomical and physiological dissertation.]

On the occasion of this observation, M. Schrauth made bibliographic researches, which brought to his knowledge twenty-six other cases of luxations of the cervical vertebræ, with his own, twenty-seven. In this number, three times, death immediately followed the accident; in seven cases the patients sank afterwards, without reduction being attempted: in three cases, the consequences of the acci-

dent are not stated; three times there was a cure without reduction of the vertebræ, but the motion of the neck remained confined; in eleven reductions, nine were successful, and two were followed by death.

*Seat*.—The luxation took place—

Three times between the 1st and the 2d cervical vertebræ.					
Twice	"	2d	"	3d	"
Five times	"	4th	"	5th	"
Twice	"	5th	"	6th	"
Twice	"	6th	"		"
Once	"	7th	"		"

In the other cases the seat was not stated.

*Direction*.—It was four times forwards, twice backwards, six times to the sides; fifteen times it was not recorded.

In the nine individuals (two with paralysis and loss of sensation) in whom the reduction was followed by success, the luxation was twice forwards, once backwards, and four times sideways; and in two cases it is not stated.

The table speaks in favour of the reduction, the more so, as in many of the patients in whom it was neglected, either death supervened afterwards, or life was rendered hopeless by the consecutive accidents.

[Guerin reduced a seven months' dislocation of the second vertebra of the neck upon the third.—*Revue Médicale*, Aug. 1840, p. 276, quoted in *Chelius*.]

ART. 57.—*Case of Ununited Fracture treated by Galvanism.*

By JAMES BURMAN, Esq., Surgeon, Wrath, near Rotherham.

(*The Prov. Med. and Surg. Jour.*, Dec. 1, 1847.)

Mr. Thomas Lister, aged 35, a railway superintendent, of a robust constitution and regular habits, had the misfortune, in the summer of 1845, to fracture his leg by being thrown from his gig. The surgeon who attended him seems to have put the limb into a very good position, and everything appeared to go on well, till, upon removing the splints, it was found that union had not taken place; and as his constitution had suffered, partly from the necessary confinement, and perhaps partly from the want of proper stimulants, consequent upon "teetotal" practice, his surgeon ordered him a more generous diet, and removal to the coast, but still no improvement took place.

He put himself under my care, just fourteen weeks after the accident. Upon examination, I found a transverse ununited fracture of the lower third of both tibia and fibula; there was no formation of callus, and the fractured ends of the bones were quite movable, but could be readily adapted to each other; neither was there any inflammatory action about the parts, although having been advised to rub the two ends of the bones together, he had very assiduously followed that advice. Mr. Guthrie had seen the case a few days before, and recommended Amesbury's splints, a modification of which I at once determined to try, in connection with the application of electro-magnetism, which I had a good opportunity of doing, as my pupil was at that time making some experiments with a small apparatus. I therefore had a kind of boot made for him, of turned sheet-iron, which, when applied, embraced the whole leg, ankle, and foot. This I had well adapted to the limb by means of padding, so as to prevent any lateral motion—an object which was the more readily accomplished, as the fracture was perfectly transverse, and that part of the boot which was directly over the fracture was made to turn back upon a hinge, so that I could at any time get to the injured part, without in the least disturbing the limb.

With this apparatus firmly fixed, and assisted by a pair of crutches, he was directed to take daily exercise in the open air; to partake freely of wine, porter, and animal food; and, when sitting in the house, or lying in bed, to have the fractured ends firmly pressed against each other, by means of a broad band passed over the knee, and under the foot-board, capable of being tightened by a strap and buckle, the leg being bent at the same time at a right angle with the thigh. This strap was to be removed, and the limb to be permitted to hang down and partially used when taking outdoor exercise. In addition to this, for near half an hour every



day, an electro-magnetic current was made to pass directly through the fracture, by means of needles attached to the two poles of the apparatus, their points being inserted just under the skin, one on each side of the fracture. This plan of treatment was commenced on the 9th of October, 1845; by the 22d, sufficient inflammatory action had been set up to render the further application of galvanism unnecessary; and by the 30th, the deposit of callus was so copious, and the union of the fracture so firm, that at my patient's earnest solicitation I gave him permission to return to his duties, directing him still to wear his boot, and to continue the use of his crutches.

I did not see him again for some considerable time, but he informed me that after the first week he threw away one of his crutches; that the next week he grew tired of his boot, and threw it on one side, together with his other crutch, and went away comfortably about his business, with only a stout walking-stick, which he continued to use for some time; and when I again saw him, one leg was equally as firm and sound as the other, the point of fracture being marked by a thick firm band of callus.

I think I am justified in attributing the great and sudden healthy action which was set up in this case mainly to the influence of galvanism; for while similar cases under the usual modes of treatment have, under the most favourable circumstances, required long and tedious attention, this case began to improve from the very first application of the remedy; within three weeks firm union had taken place, and in less than six weeks the cure was perfect.

The electro-magnetic apparatus that I made use of was a double coil machine, excited by two *electrometers*, on Professor Daniell's principle. I at first endeavoured to establish the current by two small metallic discs, one connected with each pole, and placed on each side of the fracture; but finding that little or no *perceptible* action was thereby produced, I substituted needles for the discs, and introduced their points in an oblique direction, just under the skin, on each side of the fracture, thereby causing the galvanic current to pass directly between the ends of the fractured bone. The moment the circuit was completed by the introduction of the second needle, the sensation was most acute; but in a minute or two the pain became bearable, and the patient was able to sit under it for from fifteen minutes (the time occupied at first) to a good half hour, to which I extended it the last three or four times.

#### ART. 58.—*Aphorisms on the Treatment of Varicocele.*

By Dr. FRITSCHÉ, of Fribourg.

(Collected from a complete Manuscript on the subject, *Mechanische Annalen*.)

[The various operations for varicocele here referred to, with other modern suggestions, are described at page 215 of the Second Volume of the "Half-yearly Abstract."]

1. Varicocele is a frequent disease of comparatively little importance, since it seldom occasions any serious results.

2. For this reason the most celebrated surgeons (Boyer, A. Cooper, Dupuytren, &c.) have generally disapproved of operations; even now, such methods of cure only are resorted to which are certain not to produce phlebitis.

3. Medicinal treatment diminishes the disease, but does not cure it. It is very useful as an adjuvant, when mechanical or surgical treatment is resorted to.

4. Mechanical treatment ameliorates the disease, if slight, and sometimes prevents its increase; but in complicated cases its utility is doubtful (except the method of Breschet).

5. A suspensory bandage, combined with internal medication, generally supersedes the necessity of any operation.

6. Operation ought not to be resorted to until all internal remedies, with a suspensory bandage, have been tried; and only in cases where the disease prevents the patient from following his occupations, or produces a mental malady or exhausting spermatorrhœa.

7. An operation may be had recourse to when varicocele is complicated with hydrocele, or reducible or strangulated hernia; but in such cases that operation should be selected which at the same time will cure the disease.

8. In cases where the disease is stationary, not much developed, and does not occasion any inconvenience, operation ought not to be resorted to.

9. All operations ought to be abandoned when adherent hernia exists, or a general disposition to varices, pyemia, organic diseases of the testicles, tumours in the abdomen, extension of the varicocele into the abdomen (Ribes and Henry Langenbeck), and in all cases where varicocele exists only as an accessory disease.

10. The process of Breschet ought to be preferred to all other methods, ancient or modern, as the safest and the least likely to cause phlebitis.

11. Although mortal phlebitis has not yet been represented as having followed the seton of Fricke, acupuncture, subcutaneous ligature, etc., and numerous cures have been effected by these operations, yet, in all such operations the dilated veins are wounded, and though their dangers have been exaggerated, it is better to prefer those methods which do not wound the veins.

12. The subcutaneous ligature of the vessels ought to be preferred to the direct ligature after the ancient and modern method, to the *enroulement* of Vidal, to acupuncture, and to compression.

13. The seton and simple acupuncture ought to be rejected, not because they readily produce phlebitis, but because they do not ensure against relapse, and they do not always produce adhesive inflammation to a sufficient extent to obliterate the vein.

14. In slight cases, when the patient wishes to be relieved from his infirmity, and when varicocele is joined to hydrocele, incision of the scrotum, with denudation of the spermatic cord, can be performed; this tedious and difficult operation can be applied to nearly all varicoceles, if care be taken to prolong the consecutive treatment, in order that the process of cicatrization be slow, so as to form a large and deep "*tissu inodulaire*."

15. Mediate and immediate ligature does not prevent a relapse of the disease in the collateral branches.

16. When varicocele is complicated with reducible hernia, partial invagination of the scrotum can be tried, with a suspensory bandage and cold lotions, etc., to prevent relapse of both diseases. It is still better to keep the skin invaginated, with the aid of two or three sutures upon a cylinder, or with an insect needle; the patient should remain eight weeks in bed, and the herniary bandage should not be applied too soon.

17. A radical cure is not obtained without destroying the diseased part.

18. A radical cure can be obtained by obliteration of the vessels by phlebitis, by thrombus in the interior of the vein, or by plastic concretion.

19. By this treatment, the functions of the diseased vessels cease, and a new vascular network is formed in their place.

ART. 59.—*Punctures of the Scrotum in Hernia Humoralis.* By M. VELPEAU.—The trivial operation which he resorts to almost entirely relieves the pain, and produces no inconvenience. He gently grasps the inflamed part with his hand, so that the thumb and index-finger may thrust the fluid which the hernia vaginalis contains towards the surface. He passes the lancet, held like a pen, perpendicularly into the most fluctuating portions of the tumour, so that its point may enter the tunica vaginalis, and in this way puncture, two, three, or four times, the portion held in his hand. Generally, a little jet of fluid is discharged, and if any inflammation occur, a cataplasm is applied. In almost all the cases the pain and redness diminish at once, and the scrotum recovers its suppleness. These punctures may be made at any stage of the affection.

*Gazette des Hôpitaux*, No. 136.

ART. 60.—*On the Therapeutic Effects of the External Application of Aconitum Napellus to Ulcers.* By JOHN GRANTHAM, F. R. S. C.—Those ulcers which Mr. G. has been in the habit of treating with the aconite are of a sphacelated and phagedenic character, occurring in patients of a gouty diathesis, where there is hypertrophy of the ligamentous tissue, and also those ulcers which often assume a sphacelated action over the region of varicose veins. The sphacelus is most superficial and cutaneous in the varicose limb, and deepest in true podagra: in the latter, com-

posed of an abnormal deposit (according to Wollaston's analysis) formed of the urate of soda, with a little of the urates of potash and lime, chloride of sodium, and animal matter. These ulcerations are very uncontrollable, and most acutely painful, very difficult to quiet, and still more tardy to heal: such has been his experience; and instead of finding the means answering the end, the converse has been the result, until he adopted the following mode of treatment, which consists in the application of the monk's-hood. The root, stem, and leaves should be collected when the plant is in flower, and dried in the same manner as recommended in the Pharmacopœia, i.e. "in the shade." An infusion should be made of the whole plant, as Mr. G. has found a decoction of the plant deficient in efficacy. The liquor should then be carefully strained off, and a poultice made of the fluid with bread, and applied as hot as the part will bear, and the heat maintained by covering the poultice with wadding, and changing the poultice more frequently. It is of no small importance in treating ulcers to keep up the natural temperature of the whole limb: there is a normal vitality which is essential to the healing of all wounds.

Mr. G. wishes it to be understood, that the above treatment will not at all times possess the same salutary therapeutic action on the part; but he is confident it will be found a very beneficial application in the cases he has named, after regulating the general health, by removing congestion of the brain, liver, or intestines. The effect of this dressing will be to enable the living part to throw off the dead matters and assume a healthy process. The aconite has been used internally by Stoerk in gout and rheumatism; and subsequent authors have written favourably of its effects when taken internally; but its use as an external application does not appear to have attracted the attention of medical practitioners.

*London Medical Gazette, Aug. 6, 1847.*

ART. 61.—*Subclavian Aneurism cured by Galvano-Puncture.*

By DR. ABEILLE.

(*Monthly Journ. of Med. Science, Jan. 1848.*)

The patient, a female of 65 years of age, had been affected with aneurism of the left subclavian artery during eighteen months previously to her requesting the professional services of Dr. Abeille, principal medical officer in the military hospital of Givet (Ardennes). The tumour was situated between the *scaleni* muscles, and was the size of a hen's egg. It was the source of much suffering, sleeplessness, and ringing in the ears of the patient. Added to these, she had a continual fear of sudden death, which induced her to submit to the performance of any operation which might be thought necessary for her relief. M. Abeille, considering the difficulty and doubtful practicability of applying a ligature on the vessel between the aneurismal dilatation and the heart, determined to give a trial to the method of cure, by passing a galvanic current through the contents of the sac.

After performing a series of experiments on dogs, which assured him of the possibility of obtaining a favourable result, the patient was submitted to the following operation, on the 20th of February, 1847.

As soon as the patient was rendered insensible to pain by the inhalation of ether, two pair of needles were inserted into the tumour to the depth of an inch, and a strong galvanic current was established in connexion with them. At first, the effect on the patient was slight, but at the end of five minutes it required four assistants to hold her. The operation was continued for twenty-eight minutes. During this time the tumour was felt to be becoming gradually solidified, and before the withdrawal of the needles it had become perfectly solid, and pulsation was no longer felt in it or in the brachial or radial artery below. The limb became engorged, and the patient complained of its being benumbed and pricking. During the operation, the artery above the tumour was partially compressed by an assistant. After the operation, this compression was continued by means of an apparatus for five or six hours. In withdrawing the needles, two of them were removed with ease, but the others required a good deal of rotary motion, and some drops of blood escaped from the punctures. The patient maintained the same position in which she had been placed during the operation, for eight or ten hours afterwards. For forty-eight hours after the operation no pulsation could be de-



tected in the arteries of the limb. No œdema, however, ensued, and sensibility remained unimpaired. At the end of this time the radial artery began to pulsate, and the limb gradually recovered its natural temperature. About the eighth day the tumour appeared to be diminished in size, and this diminution progressed gradually, so that at the end of thirty-eight days nothing but a small, oval, firm tumour could be felt on pressing strongly with the fingers in the situation of the swelling. During the first few days which followed the operation, there was some threatening of cerebral congestion, which was relieved by blood-letting.

No symptoms of inflammatory action manifested itself, either on the surface or in the tumour. From the punctures of the two needles, which were withdrawn with difficulty, there was slight discharge of blood and matter for three days, but they were cicatrized a few days subsequently. The report is given seven months after the performance of the operation, and it is stated that there existed, at the end of that time, no trace of the aneurism; and in its place a hard, flattened cord, to which the skin adhered. Immediately above the situation of the aneurism, two enlarged collateral branches were felt pulsating strongly. The patient was in the enjoyment of perfect health.

*Annales de Thérapeutique*, Novembre 1847.

ART. 62.—*Excerpta from Dr. PORTER'S Lectures on Syphilis.—Syphilitic Ophthalmia.*  
(*Dublin Med. Press*, April 7, 1847.)

Syphilitic inflammations of the eye, like all others, are either acute or chronic. In the syphilitic ophthalmia, I believe all the structures participate more or less, and therefore we may not form an opinion of the acute or chronic character of the disease, by the presence or absence of vascularity, cloudiness, pain, indistinctness of vision, or any other symptom, but by all, and the evidence they afford of the depth and extent to which important tissues may be engaged.

In its most acute form, the approach of the disease is insidious, although its progress, when once established, is commonly very rapid: often when questioned on the subject, the patient is made aware that he had experienced an indistinctness or imperfection of vision for some time before any trace of external disease could be observed. Mr Hewson notices an amaurotic condition of the pupil as occasionally occurring at the commencement; and, moreover, one of the most constant symptoms is a sluggishness of the iris, and an inaptitude in its answering the stimulus of light, before its colour is altered, or it affords other indications of being inflamed. There is often a sense of dull pain and weight in the organ, a susceptibility of fatigue, and an incapability of using it by candle-light long before any external appearance is remarked, and before the patient applies for relief.

The appearances of inflammation on the conjunctiva are very variable, sometimes exhibiting great intensity, and sometimes but very trifling; the vessels of the sclerotic coat are, however, more or less enlarged, and run in tolerably straight lines from the circumference towards the cornea, about three lines from which they break off into a number of minute branches, which form a vascular network among themselves, and disappear about half a line distant from its edge. Thus is formed between this vascular circle and the cornea, a ring of pale gray colour, apparently free from vascularity. This ring is broader and more observable in old patients than in young, and occasionally is not remarked at all, the network of red vessels coming closely up to the margin of the cornea.

The structure of the cornea itself is probably not engaged; but I think that it becomes more conical. Perhaps it would be more correct to say that it becomes more prominent; for it is the shape of the eyeball that appears to be changed, becoming egg-shaped, the narrow end of the ovoid figure being anterior. This is a symptom which I have remarked in many cases; and as they have almost always proved unfortunate, I regard it as indicative of some mischief amongst the deeper and more important structures of the eye—probably of the choroid membrane of the retina, and therefore likely to terminate unfavourably. The cornea, however, sometimes seems to be clouded, as if lymph had been deposited amongst its laminae; but this appearance is deceptive, and really proceeds from a turbid condition of the aqueous humour, as may be observed by looking at the eye in

profile, when the cornea itself is seen clear and cloudless, whilst the opacity is evidently placed behind it.

Like other symptoms of syphilitic ophthalmia, this varies in intensity: sometimes it is scarcely perceptible, whilst in other cases the opacity is so great as to prevent the condition of the iris from being accurately ascertained.

As it is from the iris the disease has taken its conventional name, the state of this organ has been most accurately observed and described. Almost immediately at the commencement of the disease, the motions of the pupil become dull and sluggish; soon this aperture is observed to lose its circular form and take some irregular one, generally appearing as if a portion of the circle had been cut away with a scissors. Sometimes the change of shape is more strikingly remarkable, being angular, and indeed assuming a variety of figures; and these deviations are always exhibited most clearly by applying belladonna to the eye. This symptom has been generally explained by supposing that adhesions had been formed between the uveal surface of the iris and the capsule of the lens, and doubtless such adhesion very frequently takes place. But I think the deformity is sometimes caused by lymph effused among the fibres of the iris itself, embarrassing their motions and preventing their contractions from being as free in one part as in another. When disease is formed, the pupil is always contracted; and as I cannot regard this condition as a state of rest, I look upon it as indicative of the existence of inflammation among the deeper structures, from which the light is thus sought to be excluded. The consistence and direction of the iris seem altered also. It is thicker and more gibbous, particularly at its pupillary margin, which sometimes appears to be pressed backwards towards the capsule of the lens, and then the iris is no longer a perpendicular plane, but a cone, the apex of which inclines towards the lens. At the more advanced periods, and especially when it is about to terminate unfavourably, we often observe the iris to form a conical figure, the apex of which takes a contrary direction, being pushed forward into the aqueous humour. This occurs in consequence of inflammation, swelling, perhaps of alteration of structure in the deeper parts; and is always the forerunner of disorganization of the eye, and consequent loss of vision. The change of colour in the iris is too remarkable to be passed over. It seems to be produced by the combination of the yellow tinge of the lymph with the natural colour of the part. Thus the brown iris is changed to a bright amber, the blue to a sea-green, and so on. Besides, when the eye is viewed through a magnifying glass of even moderate power, small bloodvessels, like hairs, are seen ramifying on its surface; and Mr. Hewson has remarked spots of ecchymosed blood, which, seen upon a green iris, give it a similitude to the red specks upon a bloodstone.

Such is a brief outline of the local symptoms of syphilitic ophthalmia, as they appear in the first stage; but along with these, as in other forms of the disease, some constitutional disturbance is to be expected. I have never seen fever antecedent to, or in combination with, venereal affections of the eye, unless we chose so to call that wretched irritable state which is often induced by intense pain, loss of sleep, and perhaps, also, by the fear of losing so invaluable a faculty as sight. When cutaneous affections are present (and they generally are so), there may have been those premonitory attacks of pain and fever that I have already described; and it must be considered fortunate for the patient if they are so; for the syphilitic character of the ophthalmia might be otherwise overlooked, and the eye actually lost in consequence. I have known an instance where a beautiful young lady lost her eye, from the nature of the disease having never been suspected; yet it was subsequently proved by the appearance of eruptions, and the taint was supposed to have been communicated by a kiss. I recollect a young professional man, whose sight, which must have been invaluable to him, was very nearly lost, from his having no kind of suspicion that it could be affected by venereal. He had chancres some months previously, which were treated on the non-mercurial plan, and healed; and he certainly had not the slightest idea that the sore eye was, or could be, a secondary symptom of the disease. The syphilitic ophthalmia, if allowed to progress without control or check, ends in the destruction of the organ; and this it will do under any treatment but the mercurial. I care not what the line of practice is. It may be antiphlogistic or irritating, soothing or stimulant, without mercury, all or any must be unavailing; and I wish to impress this

one practical fact upon you, because it must establish the necessity of being able to form a correct diagnosis.

The best possible diagnostic is the presence of some other unquestionable symptom, such as one of the eruptions; in fact, it is the only one that can be relied on in the first instance. Still, although any one symptom may be very uncertain, I think the assemblage of many of them taken together, along with the history of the case, and the general appearance of the patient, will not leave us long in doubt. Thus, if a patient had a primary symptom previously, for which mercury had not been used, or used insufficiently—if he was pale and haggard, subject to night-sweats, easily fatigued, and occasionally suffering from rheumatism—a very slight development of the symptoms of deep-seated ophthalmia would lead me to regard it as venereal, or, at least, to treat it as such. It has been stated that the pain is greater in the idiopathic iritis than the syphilitic. Like all other venereal symptoms, the pain is variable, sometimes slight, sometimes excessively acute; but, under all circumstances, if the case is really venereal, one characteristic is scarcely ever wanting, that of nocturnal exacerbation. As the evening falls, the pain begins to increase; it is shockingly severe during the night, and as morning dawns it gradually abates, and allows the patient the only short slumber he can obtain.—It is also stated that the intolerance of light is greatest in the idiopathic disease, and, perhaps, in some instances it is; but this symptom is extremely variable. The iris is more sluggish, its colour more completely changed, and vision more impaired in the venereal. With the assistance of all these, and even taking into consideration the collateral evidence, it is nevertheless possible to fall into error during the first stage of the disease. The second stage cannot be mistaken, as it is characterized by the formation of tubercles or abscesses in the iris.

Previous to the appearance of this symptom, there is usually an exacerbation of every other; the pain, both of the eye and the head, greatly aggravated; the vascularity of the organ greatly increased: the muddiness of the aqueous humour rendered more remarkable; and the vision more impaired. The small, hair-like blood-vessels on the iris are then seen congregating towards one spot, and soon a little pimple-like elevation makes its appearance, the base of which is red and very vascular, the apex yellow, as if it contained matter. When there is but one of these, it is usually placed on the margin of the pupil; when two or more, they may occupy any part of the surface of the iris indifferently. After some little time, these burst, and discharge a viscid, tenacious material, which is very slowly evacuated, which may occasionally be seen hanging in minute stringy flakes from the orifices of the tubercles, and which fall to the bottom of the anterior chamber, where it resembles purulent matter, and constitutes the venereal hypopion. When completely emptied, the small transparent cyst that contained the substance remains for three or four days, and when it is absorbed, a small cleft or fissure is observed in the iris at the spot it occupied. Several pathologists suppose these tumours to be abscesses, and their contents purulent matter; whilst others regard them as tubercles containing lymph: and if it be a point of any importance, I should think the latter the correct opinion. because the cyst, when burst, does not empty itself at once, or collapse, or diminish in size; and its contents are thick and ropy, instead of being fluid, like pus. But the appearance of this second stage is of immense importance, because it tells at once that the disease is syphilis, it being now the commonly received opinion, that these tubercles only occur in that form of ophthalmia—an opinion so generally true, that it may be almost universally received and acted on; but still, I fear, admitting of some few exceptions. But it is still of more importance as indicating that the eye is permanently injured—that both the beauty of the organ and the perfection of its functions are impaired forever. Even where mercury has been employed with all possible activity, although the contents of the tubercle should be absorbed, and its little transparent cyst subsequently disappears, still the pupil remains angular, contracted and distorted. The eye cannot admit a sufficient quantity of light; and, moreover, in too many cases, the retina does not seem capable of duly receiving its impression.

1. After the disease has existed for a fortnight or three weeks, the pupil is observed not only to have diminished, but so firmly fixed and immovable as not to be under the influence of belladonna: and a short time afterwards, this contracted pupil is found filled by a white or yellow spot, consisting of lymph, which remains



there whilst the patient lives. There is reason to believe that the entire of the uveal surface of the iris is covered with lymph, and the portion of it which lies in front of the capsule of the lens firmly adherent to it. Sight is now lost; nor is there a chance of its being ever recovered, except from that most uncertain of all operations, an attempt to form an artificial pupil.

2. Occasionally, and, indeed, not very unfrequently it happens that a patient shall have been put through a course of mercury, and have left the hospital, either in a state of convalescence, or of apparent recovery, and yet return after an interval of some weeks with the pupil closed, and really in a most hopeless condition. The iris has now a plain surface, unmarked by even the remnant of a pupil, or a speck, or a spot to show where it had been, or else, lines like radii are seen striking from a central point, no larger than the point of a pin, towards the circumference. There is no apparent deposition of lymph, as in the case already described. All this mischief has happened, and no satisfactory explanation of its cause can be afforded, unless that during all that time, a slow and chronic inflammation had been disorganizing and destroying the eye, and yet occasioning so little pain as to be unheeded or disregarded. In these cases, a patient can frequently distinguish daylight from darkness, and thus a delusive opinion of the soundness of the deeper structures may be created. In other instances, such faculty does not exist, and the patient is saved the pain of an operation, and the misery of disappointment afterwards; for I have never known an attempt to restore vision in any of these cases followed by even the smallest benefit. There is still another form in which syphilis may attack the eye. There is, or appears to be, a universal inflammation of the organ, commencing in, and principally confined to, the deeper structures, but eventually implicating all, and terminating in what Mr. Hewson, who first described the affection, has (perhaps erroneously) called an abscess.—It begins by a deep, intense, and agonizing pain in the bottom of the eye, in the temple, and, perhaps, in one side of the head, which pain is aggravated at night, at which time the patient's sufferings are indescribable; the eye, notwithstanding, exhibiting little or no alteration, to lead to a suspicion of the impending mischief. The next symptoms are an evident enlargement of the whole ball, with a fixed immobility of the iris, which appears pressed forwards into the anterior chamber, and whether contracted or dilated, is wholly insensible to the stimulus of light. Perhaps this might be termed the first stage of the disease, and perhaps also, up to this period, it might be possible to arrest its progress, and save the eye by a rapid exhibition of mercury; but the nature of the malady is not suspected, and the opportunity, if it really exists, is allowed to pass away. Soon symptoms of conjunctival and sclerotic ophthalmia make their appearance—vascularity, increased secretion of tears, pain, and a sensation as if a grain of sand, or other irritating substance, had been admitted under the palpebræ; and at this period, on looking deeply into the eye, a yellow opaque substance is generally perceived deeper than the iris, and as if fixed in the vitreous humour. The next step is that the eye assumes somewhat of the appearance of an abscess. A yellow spot is seen on the sclerotic, external to the cornea, which is soft and prominent, and presents precisely the characters of an abscess about to burst. Occasionally, even in the same eye, a similar demonstration of pointing is observed in the iris, as if the matter was about to make its way into the anterior chamber. At length, after intense and protracted suffering, the swelling bursts in one or both these situations, and a mass of yellow tenacious lymph is pushed forwards, but not discharged, neither does the eyeball collapse. This lymph comes away in flakes and strings, is detached very slowly, and in proportion as it escapes, the pain abates; but the eye falls down within the socket, and not only is vision lost, but a very unsightly deformity remains, that can only be palliated by the closure of the lids, or the adaptation of an artificial eye. It is well for the patient that this disease never attacks both eyes at the same time, and seldom passes from one eye to the other: and thus, although condemned to lose the one by a painful, harassing, and nearly incurable affection, he is in less danger of total blindness from the disease previously described, than what is usually called iritis.

Antiphlogistic measures, bleeding, the use of internal medicines, collyria, ointments, or other external applications, which might be useful in simple inflamma-

tions of the eye, are totally ineffectual in this. They cannot be relied on for a cure for the specific disease.

I have often had occasion to remark the great apparent superiority of ophthalmic surgery as conducted in a dispensary, to that practised in an hospital, and even in institutions where wards are set apart for diseases of the eye. Every day's experience tends only to confirm the opinion.

ART. 63.—*The Treatment of Onychia*.—Onychia forms about the root of the nail, detaches the nail from its living connexions, but still the parts are not robbed of the power of keeping up its growth. This is a most painful state of things; and, in the usual method of treating the complaint, a most torturing operation is resorted to, that of cutting or tearing off the portion of the nail. All this pain the patient may be saved, by first getting the finger as quiet as possible, by soothing measures; and when this is done, to insinuate a shred of lint, by means of a probe, hammered flat, so as to pass this small portion as far as it can go between the sore structure and the surface of the nail; and if this piece of lint be moistened with a weak solution of nitrate of silver, the beneficial effect will be apparent in twenty-four hours. The sores will heal quickly, and the pain will be subdued. The simple lint should be kept insinuated for some time, even after the sore is healed. The nail will grow to its usual length, and the hollow sore will be filled up before long.

*Vincent's Surgical Observations, 1847; p. 235.*

ART. 64.—*On Fracture of the Clavicle*. By M. VELPEAU.—Very unnecessary fears have arisen from the bone uniting not quite regularly. It is true it cannot always be effected without some slight deformity; but this is of no consequence in men, and even in women is only seen in such as are of spare make. This need not take place when the fracture is situated in the external third of the bone, the fragments being maintained *in situ* by the ligaments and muscles, so that a bandage is not even necessary. When the fracture occurs within the inner two thirds, there is always some displacement, in the adult, although this does not take place in very young children. The most complex apparatus is in nowise preferable to the following simple plan of treatment. A bandage is carried from the armpit of the sound side, across the back and shoulder, to the fractured clavicle. The patient's hand is brought up to the sound acromion, so as to raise the elbow as high as the sternum, the shoulder being thrown backwards and upwards. While an assistant holds the limb, the bandage is repeatedly passed over the anterior part of the arm, and brought round by the sound armpit; and over this is passed one well moistened with dextrine, so as to produce an inflexible mould. The bandage need not be put on for four or five days after the accident, and in from a week to a fortnight the fracture will be sufficiently firm to allow of its removal. It is an error to suppose that a patient cannot raise his arm to his head when his clavicle is fractured. He believes he cannot, and is prevented from trying by the pain it causes; but if you insist upon it, and that not doubtingly, you will find he can accomplish it. I have not seen six exceptions in twenty years.

*British and Foreign Medico-Chir. Review, from the Gaz. des Hôp., No. 115.*

[Mr. Vincent states that he treats all fractures of the clavicle by merely placing the patients on flat beds, by which the parts assume and preserve their natural position. Bandages, he says, seem to do little good commonly, and are not required if the patient keeps his bed. A cabman broke both clavicles at about the middle part; Mr. Vincent merely placed him in bed. In three weeks, both bones were united, and without deformity, although there had been considerable displacement at first.—*Surgical Practice, 1847, p. 42.*]

ART. 65.—*Case of Axillary Aneurism for which the Subclavian Artery was tied with success*. By JAMES SYME, Esq., Professor of Clinical Surgery in the University of Edinburgh.

*(Monthly Journal of Medical Science, October 1847.)*

A gentleman, æt. 34, applied to me on the 25th of July, on account of an axil-

lary aneurism of the right side. It was of a large size, filling the axilla, and pressing forward the pectoral muscle so as to be distinctly perceptible through the clothes. The patient stated, that about sixteen years ago he had fallen down a stair, and, by an involuntary effort to save himself, had seized the railing with his right hand, and consequently sustained a very severe wrench. With the exception of some pain and the ordinary uneasiness attending such an injury, he had not afterwards suffered any noticeable inconvenience further than an occasional difference of temperature in the hands, until about ten months ago, when he began to suffer from pain in the little and ring fingers, which gradually became almost constant. More lately, the axillary tumour had attracted attention; and on the 29th I tied the subclavian artery, where it emerges from the scalenus anticus, by a single silk ligature, drawn with all the tightness in my power. No inconvenience whatever was experienced; the ligature separated on the fifteenth day, and the patient, at the end of another fortnight, returned home, perfectly free from pain, and with hardly any perceptible remnant of the tumour.

In performing the operation, I made an incision along the clavicle, so as to extend over the sterno-mastoid and trapezius muscles, and another from the centre of this upwards, parallel with the edge of the latter muscle. The dissection was conducted entirely by the knife and forceps. The needle was passed under the artery with its convexity upwards, and the ligature was tied by the unaided effort of the fingers. It has been advised to pass the needle with its convexity downwards, or towards the clavicle, with a view to protect the vein from injury. But this vessel is not at all in the way, while the cervical nerves are so situated in regard to the artery, as in general to render it nearly, if not quite, impossible to convey the ligature from below upwards. It has also been advised to employ the assistance of some mechanical contrivance for tightening the knot; but I feel persuaded that the thread will always be within reach of the fingers, and may be more safely tied by them simply, than with the intervention of any instrument.

ART. 66.—*The Treatment of Subcutaneous, Submammary, and Parenchymatous Abscesses of the Breast.* By M. VELPEAU.

Subcutaneous inflammation of the breast proceeds much as an ordinary phlegmon. When the abscess is formed between the mamma and the chest, the swelling is considerable, the breast raised up; but after an incision the cure usually takes place rapidly. But when the phlegmasia invades the substance of the breast itself, it is rare to find only a single abscess produced. We sometimes see 10, 20, 40, or 50 manifesting themselves in succession. An instant's reflection will show that this result is a natural consequence of the anatomical disposition of the inflamed tissue. The glandular parenchyma consists of different globules, each of which constitutes a little organ having its own function, and which may become heated and irritated under the influence of lactation. Each lobule does not attain at the same time the same degree of irritation. One first inflames, then suppurates, and constitutes a first abscess; a neighbouring lobule then becomes affected, and, in its turn, forms an abscess; and so it may go on with all of them, until we have as many successive abscesses as there are lobules.

This distinction of abscesses of the breast into at least three orders, is of the highest importance; and if we do not adopt it, our ideas upon the subject will be but very vague, and devoid of all precision as respects prognosis and treatment. Parenchymatous abscesses may last four or six months, or a year even, according to the rapidity of their succession and their number. The subcutaneous abscess lasts only as long as an ordinary phlegmon; and the submammary abscess has not the long duration of the parenchymatous one.

Each of these has its special treatment. We may endeavour to procure the resolution of *subcutaneous abscess*, and that by ordinary means; and if suppuration occurs, we open it promptly, in order to avoid the burrowing of the pus among the tissues. *Submammary phlegmon* should be treated especially by general measures, and leeches around the nipple. Topical applications are of little use, as they are separated from the centre of inflammation by the whole substance of the mammary gland. When an abscess is formed here, its prompt evacuation is desirable; but the perception of fluctuation is difficult, for the pus is surrounded by



a large mass of tissues, and the thoracic parietes have not fixity enough to serve as a point of support. Nevertheless, you may recognise the existence of pus by the following characters. 1. An acute phlegmon rarely exists more than seven or eight days without suppuration taking place. 2. The breast is raised up like a sponge, and if we press upon it, it seems as if it were lying on a bladder full of fluid. 3. We find the breast surrounded by a kind of inflammatory œdema. Having recognised the pus, we should let it out promptly, or we expose ourselves to seeing it traverse the gland, and form one of those abscesses I call *shirt-buttons*. These abscesses, moreover, have a mischievous influence upon the chest, and may lead to purulent pleurisy. They may, too, penetrate into the cellular tissue to a distance, and give rise to a diffused phlegmon. The incision should be made into the most dependent part, the place of election being below and at the outer side of the nipple; but in some cases, a projecting point of the abscess indicates the place at which the opening should be made. It is always advantageous to make the incision towards the circumference of the breast, because the gland itself is not touched, and its weight tends to expel the pus. The bistoury should be directed almost parallel with the thoracic parietes, so as to slide it in between these and the mamma. The danger of such incisions is not so great, there being no large arteries to fear. *Parenchymatous phlegmon* requires an energetic and varied treatment—bleeding, purging, and the so-called anti-lacteal medicines. When pus forms, which is almost always the case, topical applications and incisions seldom prevent the successive implication of the lobules. Nevertheless, there is some advantage derived from the prompt opening of the abscess, *if the patient agrees to it*, for you should recollect, that in practice, if you open one abscess and another form, she never fails attributing these to your proceedings. These details will, I think, suffice to show you how important it is to distinguish the different abscesses of the breast, and to explain to you the confusion which prevails in the minds of some surgeons as regards their treatment.

[Chelius refers to the three orders of abscesses of the breast, but we have nowhere seen the anatomical distinction and the differential treatment so clearly defined.]

*The Medico-Chir. Review*, Oct. 1847; from the *Gaz. des Hôp.*, No. 89

ART. 67.—*Spermatic Discharges: their Effects and Treatment.*

By BENJAMIN PHILLIPS, Esq., F.R.S.

(*Excerpta from a Paper in the London Medical Gazette*, March 24th, 1848; p. 489.)

I have no means of knowing the amount of Lallemand's experience at the time he concluded his work; but the cases contained in his treatise amount to 115. My own experience very much exceeds that: I have been consulted in nearly 700 cases. I have memoranda of 623. He gives the particulars of 115 cases of involuntary discharges; of these, 20 were, it is said, the result of gonorrhœa, 10 of skin diseases, 13 of rectum complaints, 14 of masturbation, 21 of venereal excesses, 21 of various congenital defects of the genital organs. Of these cases he seems to have cured about 90, and to have failed apparently in 8 or 9 cases. He seems to have cured 55 mainly by the use of lunar caustic. He appears to have cured 34 by other means, caustic having failed, or it was not used.

Of the 623 cases (in Mr. Phillips' experience) only 33 had sustained any evil influence than that which was fairly attributable to great mental depression, and that depression was commonly the result, not of the extent of discharge, but of the anticipated consequences of its continuance—those anticipations being, in most cases, derived from the perusal of such books as are usually circulated on the subject. Of the 623 cases, 581 were under 25 years of age, a pretty conclusive proof that time and accident do much to bring these cases to a favourable termination or to death; and I have no reason to think that many of these cases end in the destruction of life. In 530 instances the patient had either never indulged in sexual intercourse, or he had more or less completely abandoned it, generally from inability to continue it. In a large number of instances, masturbation was admitted; in many cases it did not seem to have been carried to any considerable extent; in a majority of cases, it was said that the practice had been discon-

tinued for months, or even years, before the existence of the present complaint. In 597 cases the discharges did not occur more frequently than twice a week. In 26 instances they occurred more frequently than that. In a great majority of cases, they only happened at night, during dreams, and the patient was conscious of their occurrence. In 27 cases, discharges were now and then observed to occur, during the straining at stool, and in some instances after the passage of urine; and in these cases I have observed that the mental depression is much greater than in others, because quacks paint the consequences of such discharges in much gloomier colours than those which are accompanied by orgasm. In 16 only of my cases had the patient ever suffered from gonorrhœa, in only one instance could I make out any connexion between any skin disease and the discharges. In only one instance could I satisfy myself that the discharges were kept up by irritation excited in the rectum by ascarides. In only 4 instances could they be referred to venereal excesses.

It will be understood, then, that in my experience the so-called involuntary discharges have not been attended with such disastrous results as in that of Lallemand. When I have witnessed these injurious results, I have been convinced that the discharges have usually been voluntary, that they have been more or less completely owing to masturbation, which the patient continued to practise. These I have found the most difficult to manage, for neither lunar caustic nor moral reflections will master the habit here, although all such cases in Lallemand's practice yielded to nitrate of silver. The most certain remedy appears to me to be sexual intercourse. I constantly tell patients that if the habit of masturbation be continued, they had better not submit to treatment, for it will be of no avail.

I have not observed either the almost certain good effects, or the after-trouble, to which Lallemand alludes when speaking of the application of lunar caustic; at the same time I have no doubt that the remedy is a valuable one.

It is singular how uniform is the description of symptoms given by patients in these cases. There are few who do not complain of loss of strength, loss of memory, and confusion of mind; there are many who complain of pains in the loins and palpitation of the heart: but in a very few cases are these complaints not more imaginary than real. The alleged loss of strength rarely interferes with the ability to perform ordinary duties. The loss of memory is real enough, but it is simply that the preoccupation is so complete that nothing but the circumstance of the malady makes any impression on the mind; and the palpitation of the heart, unless under nervous excitement, is by no means of common occurrence.

My own experience has convinced me that the only certain means of relief in most cases is to be found in moderate sexual intercourse; it usually puts an end to masturbation, and the activity of the organs is most certainly mitigated by this means. I always feel a difficulty in recommending the remedy, because I cannot reconcile it to my conscience to advise a course of profligacy; and therefore I advise patients to marry, but, as may be supposed, a very common answer is, that it is inconvenient. It is never prudent, where a man alleges that his sexual energy is lost, to advise experimental connexion, because with the misgivings in his mind, he will almost certainly fail, and we shall in this way only add to his distress. If it be tried *at all*, some permanent connexion should be formed, and he should be prepared to expect many failures, but a single success occurs, and the phantom which haunted his mind is at once dissipated.

In most of the cases, however, which have come in my way, sexual connexion has not been attempted, and, either from fancied inability to accomplish it, or from an objection on other grounds, it will not be attempted. These cases are difficult to manage, and in all probability the discharge will persist in spite of all that may be done; and all that remains for us is to endeavour to convince the patient that when they do not occur oftener than twice a week, years may pass without any weakening influence on the constitution being exerted by them. Even when all evil habits have ceased, that is to say, when masturbation is no longer practised, and lascivious images are carefully and completely excluded from the mind, these discharges will often persist for an indefinite time, apparently by virtue of the activity which has been set up in the organs, and which is long maintained by habit.

There is yet another class of patients who, although they suffer occasionally

from involuntary discharges, complain principally of the too rapid ejaculation which occurs when connexion is attempted, happening often before complete erection takes place. For the most part I have found such persons to possess very excitable temperaments, and they make these attempts unfrequently, although a species of sexual excitement is kept up. Again, in these cases the remedy is to be found in a regular and not too frequent relief to the tension which is maintained in these organs. I have rarely known a case where such a plan has been faithfully followed without complete relief; but I have, in such cases, occasionally observed the good effects of cauterization, which, in them, seems to act by lessening irritability.

Respectable practitioners often do harm by exciting hopes of amendment or cure from the employment of tonics and stimulants, such as various preparations of iron and cantharides; they are very rarely of any use, and after persisting in such means, often for months, the patient is doomed to disappointment and increased despondency. The truth is, it is not debility which we have to do with, in most of these cases, but an increased activity of the secreting organs, and relief is most certainly obtained by periodically relieving the seminal vesicles from the distension to which they are subject.

The cases which are improved by local applications, whether of lunar caustic or any less energetic agent, are a small minority. In the early part of my experience, and following in the train of Lallemand, I applied lunar caustic to the urethra in most cases, and in many with seeming benefit to the patient; in some with complete relief to the symptoms, but in others the discharges continued unchanged.

The rule upon which I then acted I now follow; that is to say, I do not usually employ lunar caustic when there is no other indication of morbid action than is furnished by the occurrence of these discharges. Where there are increased sensibility, and chronic discharges, I often apply caustic upon the portion of the canal which appears to be the seat of morbid action, and often with great success. Where there is contraction of the canal of the urethra, I endeavour to overcome it by the use of dilating bodies; and when the discharges are kept up (which is in my experience very unfrequently the case) by such contractions, relief is sometimes obtained. But there are cases in which I have applied the lunar caustic, although there was no reason to believe in the existence of any morbid action on the mucous surface of the urethra. The truth is, that many persons present themselves under profound despondency. Many means have been employed and have failed; it is soon evident that they are not content to take advice only, but they are extremely anxious to have something done; and I have on many occasions applied caustic, because the patient had great faith in it, and would not be satisfied unless it were employed. In such cases I have first endeavoured to dissipate from the patient's mind the fears by which he was beset. I have applied the remedy, and recommended the patient not to expect any very decided relief for two or three months. I have had no hesitation in applying caustic under such circumstances, because, with all my experience of it, I have never known any mischief to follow its use, except in two instances, where there was retention of urine in the evening of the day.

Whenever I apply caustic, I seek to determine a discharge which persists for twenty-four or forty-eight hours; if that effect is not produced, the full effect of the remedy is not obtained. If there be reason to think that a chronic discharge be kept up by inflammation or by strictures, and that the spermatic discharges are dependent thereupon, they must be got rid of before we can hope that the spermatic trouble will cease; and even when they are got rid of, habit may cause it to persist almost indefinitely.—Vide the *Report on Surgery* in the present volume.

ART. 68.—*Removal of the Parotid Gland.* By Professor PANCOAST. Reported by ELLERSLIE WALLACE, M.D., Demonstrator of Anatomy in Jefferson Medical College.

(*Medical Examiner*, July, 1847.)

The patient was a woman, æt. 60. The disease commenced upwards of ten



years ago as a swelling of the gland, of an acute character, simulating ordinary parotitis. After the acute symptoms had passed away, the gland did not return to its normal size, but remained a little enlarged for a few years. It then began to increase in size. Its growth increasing more rapidly within the last year, and being accompanied by shooting pains about the face and forehead, she came to Philadelphia to seek surgical aid, and, consulting Dr. Pancoast, gladly consented to an operation in hope of a cure.

The tumour was on the right side of the face, nodulated and irregular in its external aspect, and appearing about half the size of a man's fist. It extended from a little above the zygoma to a short space below the angle of the jaw, passing over the greater part of the masseter muscle, and backward under the ear, so as to elevate and press posteriorly the anterior border of the ear; it likewise nearly surrounded the auditory meatus, and also overlapped the insertion of the sterno-cleido-mastoid. When grasped firmly, it was found but slightly moveable, deeply fixed, and firm in its texture, except at its upper part, where there seemed a local point of softening. None of the surrounding lymphatic glands seemed at all involved. The complexion of the patient was somewhat straw-coloured, though she appeared vigorous for her age.

*Operation.*—The patient was placed on her left side, with the head and shoulders elevated, and her head well turned towards the left shoulder. The tumour was exposed by a single incision, shaped something like the italic *f* reversed; it was commenced above the top of the ear, and carried forward and downward to near the centre of the tumour, then in a direction sloping slightly backwards to just below the lobe of the ear, when it was again directed forward, downward, and nearly vertically, leaving a concavity in front, and terminating about an inch and a half below the base of the jaw, and somewhat within the inner edge of the sterno-mastoid. The dissection was then commenced by reverting the flaps so as to expose the tumour, and continued by separating the diseased mass first above, then posteriorly, next anteriorly, and lastly below. Some vessels bled from the surface of the tumour, as well as some small arterial branches from the flap, but by pressure of the fingers, and the application of a few ligatures, all material hemorrhage was arrested.

Dr. Pancoast now sought for the external carotid artery, with a view of placing a ligature upon it near its entrance into the tumour: this required a slight increase in the length of the first incision, as, from the size and attachments of the tumour, it was somewhat difficult to reach the vessel. It was isolated, however, with its vena comes, and the two were raised on the director, and Physick's aneurismal needle armed with a ligature passed under them along the groove in the director, and both secured in the loop. From this moment to near the conclusion of the operation, there was very trifling hemorrhage. The vessels were now cut beyond the ligature, and while strong traction was made upon the tumour, Dr. Pancoast detached it from its connexions to a still greater distance below. The patient complained much of the pain caused by the upward traction. The tumour was next loosened to a greater extent above, as well as posteriorly and anteriorly. The central part of the tumour, deeply seated, was the last part detached: and a strong jet of blood, by retrogression from the internal maxillary artery, as the final cuts were made, required that a ligature should be applied to the divided vessel. This ligature, with two on smaller bleeding vessels, and the one on the carotid artery, were all that were left at the conclusion of the operation.

A small piece of diseased structure being discovered after the thorough cleansing of the wound, near the bottom of the cavity, it was removed by the handle and blade of the scalpel. As far as was possible, the handle of the scalpel was used during the operation, but for the most part the attachments were so firm as to require the cutting edge. The constant firm traction directed by Dr. Pancoast, was of much value in facilitating and in hastening the extirpation of the diseased mass.

The depth of the wound was very great, as well as its extent. It was six inches in length, exposing the greater part of the masseter muscle; a part of which being adherent to, was removed with the tumour, and a small portion of the buccinator was also laid bare. The under surface of the internal pterygoid was exposed, as well as the entire ramus of the jaw posterior to the masseter muscle, the ligaments

of the tempero-maxillary articulation were also laid bare on their outer, lower, and inner surfaces, and the condyle could be seen sliding forward in its socket when the mouth was opened. The finger being placed on the styloid process of the temporal bone (which was exposed its whole length), and carried downward, the contraction of the styloid muscles could be distinctly felt. A part of one of the styloid muscles, which was embraced by the tumour, was removed with it. The insertion of the sterno-cleido-mastoid into the mastoid process was also plainly shown. There was paralysis of the side of the face, and of the orbicularis oculi, induced by the division of the portio dura—this nerve having been removed with the diseased structure. The lips of the wound were approximated by suture, and pressed down into the deep cavity by a compress of lint spread with urate; another compress was laid over the entire length of the incision, and strips of adhesive plaster applied to keep the sides of the cavity in contact. The patient was a good deal exhausted at the close of the dressing, and took about an ounce of wine in some water; reaction soon came on, and she pronounced herself comfortable.

Dr. Pancoast invited me to visit the case after the operation, and upon no occasion has there been any unpleasant symptom, either constitutional or local. Her appetite has been good, she has rested well, had no fever nor local pain, nor soreness enough to induce any complaint. We examined the wound on the fifth day after the operation, and the upper and lower part, for three-fourths of an inch, had united by first intention, and so favourable was its appearance, that the centre, where the first compress had been placed, was not disturbed. On the tenth day the first entire dressing was made, and on the twelfth the second. There had been no discharge of matter, except a little that hardened on the ligatures, and there was scarcely any odour from the wound. Union by first intention has been complete, closely embracing the ligatures, the integuments being sunk down in the deep fossa left by the removal of the diseased gland.

Since the fifth day from the operation, the patient has dressed and sat up daily.

[Although removal of the parotid has been deemed unjustifiable, and, as above illustrated, is a difficult and dangerous operation, still it has been frequently performed with success. Mr. South states that he has performed *eight extirpations* without any untoward accident, and refers to cases related by Schmidt, Beclard, Chelius, Kirby, and others.]

ART. 69.—*Turpentine as a Remedy in the Hemorrhagic Diathesis.*

By J. P. VINCENT, Esq.

(*Observations on some of the Parts of Surgical Practice*, 1847; p. 216.)

Some years ago a youth was brought to Mr. Vincent, who was passing blood in his urine. He ordered some draughts, with a few drops of the oil of turpentine. The bleeding quite stopped before the end of the second day, and did not return. About a twelvemonth afterwards he was brought again, having cut his finger slightly; it had continued bleeding for some days. He gave him turpentine again; it stopped in a day or two. Not long after he came a third time; he had a tooth extracted, and it had been bleeding for several days. The turpentine was had recourse to, and the remedy soon acted in the same sanatory way. Mr. Vincent has several times been called in on account of hemorrhage when teeth have been extracted, and has never seen the turpentine fail in this, nor in other similar cases of hemorrhage. Not only is the administration of this medicine by the mouth so efficacious, but the local application is also powerful in stopping bleeding; and happily so, as it anticipates the time the other method requires for effecting the purpose. At all events, it is a powerful auxiliary. The use of it is to be made with the injunction that no coagulum should be allowed to remain upon the part. Mr. Vincent says he was on the point one day of leaving London for a few hours, when he was called upon to a case of bleeding from the socket from which a tooth had been extracted, and that in considerable quantity, the subject being a weakly, middle-aged female. His confidence was such in the power of this means, that he left instructions to clear away the coagulum, if any, and apply turpentine to the part, and he ordered draughts of it to be taken, and went away without waiting to see the effect. He learned afterwards that the bleeding had soon stopped, and the medicine, internally, was not wanted.

**ART. 70.—Case of Popliteal Aneurism cured by Compression in four days.** By Mr. CUSACK.—The following is one of the most encouraging cases which has yet been recorded. A man of 30 years of age, of stout make, but not very healthy aspect, was admitted into Steeven's Hospital on the 14th May last, under the care of Mr. Cusack. An aneurism existed on the right ham, about three inches in length, and its breadth limited on each side by the hamstring tendons. The disease had originally been perceived two months previously, at which time, while walking, he suddenly felt "something give way" in the situation of the right popliteal artery; and on examination a pulsating tumour was found to exist, of the size of a pigeon's egg. On his admission into the hospital he complained of little more than an uneasy stiffness about the knee. The collateral branches around the knee-joint were very large, particularly one which crossed the internal condyle, fully equal in size to the radial artery.

After a few days' rest in the horizontal posture, during which time the patient took ten drops of tincture of digitalis thrice a day, pressure was made by a suitable instrument on the femoral artery as it passed over the pubes. A degree of pressure was exercised sufficient only to diminish, without entirely interrupting, the current of blood through the vessel. When the pressure became painful, the compressing pad shifted an inch and a half lower down on the artery, and by alternating the pad upon these two points, uninterrupted compression of the artery was maintained.

The compression was commenced on the 22d of April. On the 24th, the tumour had increased greatly in solidity, and the pulsation was scarcely perceptible. Compression was now augmented, so as to remove altogether pulsation from the tumour; and on the 26th, on taking off the instrument, pulsation was found to have ceased entirely.

He was kept in the hospital for a month afterwards, when he could walk very well, and flex the knee perfectly. The tumour in the ham was still to be felt, but hard, and greatly diminished in size.

*Dublin Quarterly Journal of Med. Science, Aug. 1847.*

**ART. 71.—Case of Exostosis of the Tibia, and Operation.** By J. SEDDOM, M.D., F.R.C.S., &c., lately one of the Surgeons to the North Staffordshire Infirmary.

*[Prov. Med. and Surg. Journal, Feb. 10, 1847.]*

In this case an agricultural labourer, aged 21, about two years and a half ago, observed what was first called a "lump" in the upper and back part of the right leg, by uneasiness in the part, which was attended with occasional numbness in the ankle. There is no very marked swelling of the part, but the muscles of the calf, on examination, seem to be stretched, and a hard tumour can be felt firmly attached to the upper and posterior part of the tibia. A pulsating blood-vessel can be traced on the outer edge of the tumour. The patient thinks the swelling may have been caused by leaping. A free incision, commencing at the lower part of the popliteal space, and within the inner hamstring, was extended about four inches downwards, on the inner edge of the gastrocnemius muscle, and parallel with it. This was continued across the muscle, and carried a little upwards, so that the cut had somewhat of a hooked appearance. By this means a flap was formed of the muscles of the calf, which was turned upwards; two bleeding vessels were tied at this stage. The tumour now became apparent, covered only by an expansion of muscular fibres. Having drawn aside the vessels and nerve, by means of a copper-hooked spatula, the muscular fibres were divided so as to expose the tumour clearly. It had an extensive attachment to the tibia, and overhung its inner edge, so as to fill up the interosseal space at this part. By means of a chisel and mallet applied to its inner edge, it was partially divided; the chisel was then worked into the internal structure of the tumour, with the hand alone, and by raising the handle of the instrument. A few projecting points of bone were removed by the bone-nippers. Some lint having been applied to the bottom of the wound, the muscular flap was laid down, and a piece of lint placed over it; and this being retained by a bandage loosely applied, the patient was carried to his bed.

The operation was effected with much less difficulty than was anticipated. The



tumour was as large as a middle-sized potato, had a nodulated appearance, and a flesh colour, having somewhat the resemblance of large granulations, but this appearance was only superficial; internally it had a cancellated bony structure. The diameter of its base was nearly three inches.

The patient was discharged cured.

The difficulties of the operation which presented themselves to myself and colleagues, before it was undertaken, were, first, the danger of wounding the vessels and nerve, passing from the popliteal space; secondly, it was thought possible that the tumour might extend so far upwards as to endanger the opening of the capsule of the joint; and lastly, if the excrescence were of a firm texture, there might be considerable difficulty in detaching it from the bone. However, as it was considered that amputation of the limb would soon be required, if the tumour continued to increase, it was decided to undertake its removal, having first apprised the patient of the difficulties and danger of the case. I had no apprehension that the disease was of a malignant character, as the patient had a healthy aspect, and his general health had always been good.—*On the Treatment of Ectostosis*, vide "Half-yearly Abstract," Vol. V, p. 163.

ART. 72.—*On the Treatment of Chronic Inflammation of the Bladder by Injections of Nitrate of Silver.* By ROBERT L. M'DONNELL, M. D., Licentiate of the King and Queen's College of Physicians, and of the Royal College of Surgeons, Ireland.

(Condensed from the *British American Journal of Medicine*.)

Some years ago, Mons. Lallemand, the eminent professor of Montpellier, discovered, accidentally, the great value of nitrate of silver in chronic inflammation of the bladder, and the utility of his plan was shown in a paper by Dr. O'Bryen, in the fourteenth volume of the "Dublin Medical Journal." But this gentleman does not appear to have had any personal experience of its employment, and, moreover, he confines his remarks to the use of the solid nitrate, the form preferred by Lallemand.

Having met with some cases of chronic cystitis that resisted general treatment, and bearing in mind the great success which attended the application of nitrate of silver in substance, in the hands of Lallemand, I determined to give the remedy a further trial in the form of solution, and the success I met with has far surpassed my most sanguine expectations; I have now no hesitation in stating, as far as pure uncomplicated chronic inflammation of the bladder is concerned, that the opprobrium has been removed from surgery, and that we do possess a method of treatment followed by a greater amount of success than usually attends remedies employed in diseases of so severe and intractable a nature, and infinitely greater than attends the use of any remedy in a disease hitherto considered by the first authorities as incurable.

In proof of this assertion, I shall adduce four cases, two of which occurred in my private practice, and the other two were witnessed in the wards of the Montreal General Hospital, by a large and intelligent class. I could adduce others, but these I bring forward sufficiently support the views I am anxious to inculcate.

CASE I. A gentleman consulted me last February, under the following circumstances. He had suffered for some months from inflammation of the bladder, marked by frequent desire to pass water, accompanied by heat and scalding, violent straining, pain in the region of the bladder, above the pubis and in the perineum, and a constant feeling of heat and weight in the lower portion of the abdomen. These symptoms gradually increased in severity. The urine became at first bloody, and afterwards purulent, and the desire to void it became so urgent that it had to be yielded to at least every fifteen minutes; the discharge of the fluid being followed by pain and scalding at the neck of the bladder, and along the course of the urethra. His general health became impaired, and his sleep so frequently disturbed, a haggard and anxious expression of countenance, and extreme irritability of the system, were soon established.

When he first consulted me, fully one-half of the fluid passed from the bladder was pure pus; and after repose, a deposit of blood-globules were found to intervene between this and the supernatant urine—the latter being highly alkaline,

fetid, and albuminous. Examined microscopically, it exhibited some scales of nucleated epithelium, a large deposit of triple phosphate in prismatic crystals, pus, and blood-globules. There was no pain in the loins or along the ureters. He had a stricture of long standing, about one inch from the orifice of the urethra. In addition to the above characters, the urine was frequently mixed with tenacious masses of lymph, varying in length from half an inch to an inch, and entangling a quantity of earthy matter, very frequently obstructed the passage of the urine through the stricture, and required to be broken up and squeezed through by the pressure of the patient's fingers.

Having dilated the stricture, so as to allow a large-sized catheter (No. 11, Weiss) to pass, on the 17th of February I injected into the bladder a lotion composed of eight grains of lunar caustic, two drachms of tincture of hyoseyamus, and four ounces of distilled water.

The injection caused hardly any inconvenience, except that of inducing a strong desire to empty the bladder, which was prevented by compressing the penis, until the fluid had been in the bladder for about one minute, when it was allowed to escape. The next day the patient stated that he was somewhat better, but the quantity of pus and blood was not, however, much diminished, and the flakes of lymph were more numerous and larger than before. Although he continued improving, yet, as the amendment was not as rapid as I anticipated, injection of the viscus was again resorted to on the 5th of March. On this occasion, the quantity of caustic was increased to sixteen grains in the four ounces of distilled water, and the hyoseyamus was omitted. A decided improvement immediately followed; the frequency of making water was greatly diminished: instead of requiring to be voided every fifteen minutes, the bladder could retain its contents for more than two hours at a time, and the quantity of pus had greatly decreased. An injection, of the same strength, was again employed on the 28th of March, and with happy results. The urine could now be retained for three or four hours, was passed without pain or scalding, was clear and transparent, and, to the naked eye, free from pus: but when examined microscopically, a deposit of pus-globules and some epithelial scales were perceptible. On the 18th of April, I repeated the injection, and since then he has been completely free from any symptoms of his troublesome disease; he had resumed his former mode of life and pursuits, and has been subject to various changes of temperature whilst travelling, without experiencing the least return of his former symptoms.

CASE 2. In this case, I commenced at once with an injection of sixteen grains of nitrate of silver in four ounces of distilled water. The immediate effects were, the disappearance of the pain, which had been constantly present for three years; the urine was passed without any heat, scalding, or uneasiness; and the necessity for emptying the bladder became less frequent: the quantity of pus was much diminished, and no more blood was observed in the deposit, and his nights were passed in ease and comfort.

About a fortnight after, the bladder was again injected, with the same quantity of the solution of nitrate of silver, and the improvement which followed was equally remarkable. The urine can now, August 27, be retained for nearly the usual length of time; it contains barely a trace of pus, and is voided without the slightest pain. His nights are spent in comfort, his strength has greatly increased, and he has gained flesh. Finding himself so much improved, he has gone to the country for change of air, to expedite his cure. Even should some of the symptoms return, owing to the suspension of the treatment, I have no doubt they will quickly disappear after a third injection of the caustic is had recourse to.

CASE 3. A man, æt. 26, a labourer, was admitted into the Montreal General Hospital, labouring under paralysis of the lower extremities, the result of a severe injury. In addition, it was discovered that he had lost the power of emptying the bladder, and that the urine was mixed with a quantity of tenacious fetid mucus and pus.

He remained in hospital for some time before he came under my care, and then the following was the condition in which I found him:—Loss of motion and sensation of both lower extremities; inability to empty the bladder completely, but yet not requiring the catheter; the urine was constantly dribbling away, when he assumed the erect posture, was highly offensive, mixed with a large quantity

of pus, mucus and blood, and crystals of triple phosphate. It is unnecessary to detail the particulars of the treatment employed for the restoration of the power and sensation of the limbs. Suffice it to say, that after some time the sensation was completely restored, and he had acquired sufficient power over the limbs to enable him to walk about the wards, but no improvement was observed in the character of the urine. The notes taken by one of my pupils, state that "the urine was half pus, and caused great pain and scalding in passing."

Jan. 3. He was ordered the following mixture:  $\mathcal{R}$  Infus. buchu  $\mathfrak{z}$ vss; tinct. buchu  $\mathfrak{z}$ j; bals. copaibæ, liquor potassæ, tinct. hyoseyam., aa  $\mathfrak{z}$ ss—one ounce three times a day.

Jan. 7. The quantity of pus had diminished to about one-third, and he was directed to continue the use of the medicine.

Jan. 21. As the quantity of pus had not perceptibly decreased since last report, I determined to employ injections of nitrate of silver, and as the disease had received a notable check from the internal remedy, I did not consider it necessary to use a stronger solution than one grain to the ounce.

Jan. 22. The urine was much clearer, and the deposit of pus was less by one half than previous to the injection, and he could retain the urine for two hours.

Jan. 28. The bladder was again injected, and next day no deposit was exhibited, and the urine was almost as clear as natural.

This man, soon after the last report was taken, was attacked with maculated typhus, and passed through the disease without suffering the slightest inconvenience from the affection of the bladder; and throughout, the urine exhibited a healthy character, even when examined microscopically.

CASE 4. A strong, healthy man, æt. 30, who had been under the care of my colleague, Dr. Hall, in the Montreal General Hospital, for gonorrhœa, and was discharged cured of the complaint, came to me about a month after his dismissal from hospital, complaining of frequent desire to make water, and of pain and difficulty in doing so. As there was no discharge whatever from the urethra, I thought it advisable to pass a catheter, and not meeting with any obstruction, I collected the urine drawn off by it, and examined it at the moment. It was slightly acid, spec. grav. 1024, at temp. 72° Fahr., coagulated on addition of nitric acid, and yielded an abundant exhibition of pus-globules on examination with the microscope. Having no symptoms referable to disease of the kidneys, I treated him for cystitis, and with decided benefit at first, but as he had not a comfortable residence, and was obliged to walk a great distance to my house, in the late hot weather, I recommended him to enter the General Hospital under my care. Here I had frequent opportunities of directing the attention of the students to his case. The urine being again examined, exhibited not only a deposit of pus-globules, but also of blood-globules. Notwithstanding this unfavourable complication, he was discharged about five weeks after admission perfectly cured.

In this case I injected nitrate of silver solution into the bladder; the quantity of pus immediately diminished, and after the third injection completely disappeared. The microscope was of the greatest aid to me in every stage of this interesting case.

I introduce this case for the purpose of showing that the injection of a solution of nitrate of silver into the bladder is not only of use in cases which could have been cured by other means, but that it is eminently successful in those instances which have resisted the most valuable general remedies.

*Remarks on the Operation.*—The patient being placed either in the erect position or on a sofa, a gum-elastic catheter, about the size of No. 9 or 10 (Weiss), is introduced, and water at the temperature of 21° F. is injected through this into the bladder, by means of a caoutchouc bag, or what I prefer, a syringe with a "three-way valve," by which the fluid can be drawn back if necessary. After the bladder has been completely cleansed of any fetid urine and mucus which may be contained in it, the solution of the caustic, being heated in the same degree, is to be introduced in a similar manner, and allowed to remain there for about one minute, care being taken, by compressing the urethra, to prevent its being forcibly ejected by the violent straining that is certain to be induced. The quantity of water or solution should never exceed four ounces; for though the bladder in its healthy state is capable of containing a pint and a half of urine, without being over-dis-



tended, yet as the quantity it is capable of retaining in severe chronic inflammation seldom exceeds a few tablespoonfuls, the bladder accommodates itself to its diminished contents, and gradually becomes smaller, and consequently a large injection would act injuriously in two ways—by over-distending the organ, or by passing up into the ureters. In fact, we find it unnecessary to use a larger quantity of the solution than I have mentioned, for it requires some address to introduce even that amount without resorting to force. The patient is then ordered a warm bath; and should the urine become bloody or mixed with shreddy concretions, he should use frequent fomentations and anodynes. But these symptoms seldom last for more than a few hours, and our patient should always be informed that such consequences are likely to be the immediate effects of the operation.

My patients have not suffered from retention of urine, which it appears frequently follows the use of the solid nitrate in the practice of Lallemand: nor have they had any inconvenience which was not readily allayed by an opiate.

The advantages which I consider the solution of nitrate of silver possesses over that substance in a solid form, are, first, that we can employ it of various strengths, from one to four grains, or even stronger if necessary. Secondly, we are certain that the application comes in contact with the entire diseased surface. Thirdly, we are also satisfied that it does not act more violently on one part than on another. Fourthly, it is more readily employed by an experienced operator; and, above all, it cannot possibly be attended with any risk, from the apprehension of which it is not easy to divest the mind, when using the *porte caustique* of Lallemand; and, together with the above advantages, it has this also to recommend it, that it will be found at least equally successful.

ART. 73.—*Injection of Solution of Sulphate of Iron for the Cure of Prolapse of the Intestine.* By J. P. VINCENT, Esq.

*Observations on some of the Parts of Surgical Practice, 1847; p. 173.)*

[After mentioning that, with few exceptions, the author adopts the operation of excising internal piles in preference to the ligature, and that by the use of a solution of sulphate of iron, a grain to an ounce, he has never been troubled with any serious amount of bleeding, he proceeds to state:]

Of late I have found such great advantage in employing sulphate of iron in prolapsed bowel, that the operation may very often be dispensed with, and the patient quite cured, merely with the use of this remedy. Very lately I had in the hospital two cases of the worst sort; the one of twenty years' standing, with a great protrusion and abundance of bleeding piles, who, in about three weeks, left without any protrusion or bleeding, declaring himself to be in a state of comfort that he had not known for so long a time. The other came from one of the institutions that offer great pretensions in the treatment of this class of cases. It was very bad, having both internal and external piles, and the bowel descending largely and most readily. He was completely relieved in about a month. Other cases of a slighter kind have been set to rights in not much more than a week. The patients should be kept in bed, of course, so that there should be every facility for repose of the bowel; and after it is cleansed out, a small quantity of the injection should be daily thrown up and retained. If the stomach can take balsams, they seem well adapted for the treatment of this disease.

ART. 74.—*The Treatment of Wounds in the Chest.* By G. J. GUTHRIE, Esq., F. R. S.

*(Lectures on some of the more important points in Surgery, Medical Times, April 8, 1848.)*

In order to be explicit on points so important as those of which I have treated, I have thought it right to lay down certain general conclusions, subject to general deviations:—

1. All incised or penetrating wounds of the chest should be closed as quickly as possible, by a continuous suture through the skin only, and a compress supported by adhesive plasters, the patient being afterwards placed on the wounded side.

2. If blood flows freely from a small opening, the wound should be enlarged so as to show whether it does or not flow from within the cavity. If it evidently

proceed from a vessel external to the cavity, that vessel must be secured by torsion or by ligature.

3. If blood flow from within the chest, in a manner likely to endanger life, the wound should be instantly closed; but as the loss of a reasonable quantity of blood in such cases, say from two to three pounds, will be beneficial rather than otherwise, this closure may be delayed until syncope takes place, or till a further loss of blood appears inadvisable.

4. If the wound in the chest have ceased to bleed, although a quantity of blood is manifestly effused into the cavity of the pleura, the wound may be left open, although covered, for a few hours, if the effused or extravasated blood should seem likely to be evacuated from it, when aided by position; but as soon as this evacuation appears to have been effected, or cannot be accomplished, the wound should be closed. It must be borne in mind that the extravasation which does take place is usually less than is generally supposed—a point which auscultation and percussion will hereafter, in all probability, disclose.

5. If auscultation and percussion should indicate that the cavity of the pleura is full of blood, and the oppression of breathing and the distress are so great as to place the life of the patient in immediate danger, the wound, although recent, should be reopened.

6. As soon as the presence of even a serous fluid in the chest is ascertained to be in sufficient quantity to compress the lung against the spine, and time has been allowed for the closure of the vessel from which blood originally flowed, a counter-opening should be made in the place of election for its evacuation by the trocar and canula, which may be afterwards enlarged, unless the reopening of the wound should be thought preferable, which will not be the case unless it should be low in the chest.

**ART. 75.—Restoration of the *Alæ Nasi*. By M. BONNET.**

(Translated for the *Prov. Med. and Surg. Journal*, Oct. 20, 1847.)

The *alæ nasi* are composed of skin, mucous membrane, and intermediate fibro-cartilage. In order, therefore, to restore a deficiency in these parts, the portion of flesh which is transplanted should consist of the three tissues mentioned.

None of the methods at present in use fulfil these conditions. If the portion to be substituted be taken from the skin of the cheek, the new *alæ nasi* is composed solely of integument, and is, moreover, extremely prone to gangrene, leaving an indelible cicatrix on the spot whence it has been taken. These disadvantages are all done away with if the surgeon makes use of the flap taken from the entire thickness of the upper lip; for in the first place he restores the lost part by a portion of similar construction, the skin of the nose is replaced by that of a neighbouring part, the mucous membrane of the interior of the nose is represented by that of the interior of the lip, and the muscular structure of the organ becomes a substitute for the fibro-cartilage of the nostril. Secondly, the flap of skin which is twisted round through the fourth part of a circle, being supplied by numerous vessels, is but little liable to sphacelate, but on the contrary unites readily; and, thirdly, the wound on the lip gives rise to a linear cicatrix, as it is sure to heal by the first intention, if the edges are properly adjusted. The success of this method is well exhibited in the subjoined case:

*Complete destruction of the left alæ nasi: restoration by means of a portion of the upper lip.*—Claude Poyet, aged 57, had the left *alæ nasi* entirely destroyed by lupus. The ulcer had been cured for upwards of six months, leaving a large excavation, which disclosed the interior of the nares. It occurred to me that this was a favourable opportunity for testing the above operation, and I accordingly performed it as follows:

After denuding the cicatrized edges of the deformed nostril, I cut through the entire thickness of the upper lip on the same side, by two incisions. The first of these commenced at the posterior angle of the ulceration, and inclined slightly towards the centre of the lip; the other, beginning half an inch farther back, ended at the commissure of the mouth. The space included between the incisions was exactly equal to the length of the anterior border of the ulcer. The flap was then separated from the superior maxilla for about a third of an inch in height, and the

two edges of the divided lip were brought together by three pins; the flap itself, being twisted round its anterior edge, was placed in apposition with the posterior border of the ulcer, its inferior edge to the anterior border, and its posterior edge was left to form the free edge of the nostril. The parts were kept in apposition by five sutures.

The advantages of this mode of operating were immediately visible. The cicatrix on the lip was perfectly linear, as in the operation for hare-lip, the flap filled up the gap in the nostril with the greatest exactitude, and the projection formed by the twist given it in some measure resembled the natural state of the parts. The case was seen by several surgeons, and its results were considered in the highest degree satisfactory. The only drawback was the necessity of shaving the new nostril, upon which the beard grew as usual.

In order to exhibit the advantages of the above method of operating, I will now briefly pass in review the different processes for restoring the *alæ nasi* which have generally been adopted.

When the integument covering the bones of the nose is not implicated, and the destruction is entirely confined to the cartilage of the nostril, it is evident that the restoration must be made from the neighbouring integuments, and not from the forehead. In doing this, two methods may be followed: that by traction, or the French method: or the Indian, or the method by torsion. The French plan may be adopted under two modifications. The flap of integument which is detached on three sides may be left adherent by its outer or by its upper border. By the first method, if the loss of substance has been as great as in the present instance, it is doubtful whether the flap could be drawn sufficiently forwards to enable its internal border to be neatly adapted to the skin which remains upon the dorsum of the nose; and even if by minute dissection this adaptation be effected, the appearance will be anything but graceful, as the side of the nose thus restored will have a straight direction from the cheek to the bridge of the organ, instead of assuming the natural sinuosities of that feature.

If the flap from the cheek be left adherent at its superior border, as is advised by M. Serreo, the operation will doubtless be more easily accomplished; but it is to be feared that the flap, which is supplied by capillary vessels only, will be inclined to sphacelate; and in addition to this the wound, which is necessarily made to obtain the flap, will offer a most unsightly cicatrix.

M. Labat proposes to restore the *ala na-i* by a flap taken from the cheek, and twisted upon itself; a proceeding which we do not consider as offering any prospect of success. If the muscles of the face are included in the flap, the movements of the face are in part destroyed, and the facial artery and vein are wounded; and on the other hand, if the skin alone is used, there is the fear that it will sphacelate, at least at its borders, and thus destroy the form of the nostril.

In reference to the plan which I have above advocated, there are but two trifling objections—viz. the growth of hair upon the nostril, and the great thickness of the flap. The latter is more apparent than real, and the former inconvenience is readily obviated by the razor, or the use of depilatories.

ART. 76.—*The Treatment of Dislocation of the Patella on its edge.* By J. P. VINCENT.

(*Liber citatus*, p. 173.)

When the patella rests in its trochlea, but is turned on its edge, the inner edge is applied to the femur, the outer, of course, standing out at right angles to it; the upper surface faces the other knee, and the articular surface looks outwards. It might, on first consideration, be supposed that a replacement could be readily effected; but, practically, it is a very formidable undertaking, if the surgeon has not entered into those views I now offer to the profession, in connection with the association under which muscles act. Some years ago, I was called suddenly by a surgeon to assist in reducing a dislocation of this sort, for effecting which, the medical man had resorted to all the various expedients he could contrive for effecting the purpose. I found the patient to be a gentleman who some years before had, in the common way, dislocated the patella whilst shooting; and that he had subsequently had the same accident often occur; but now it had become the dislocation of the above kind. The surgeon had exhausted his ingenuity.



however, we resumed the series of contrivances with all the powers we could exert of lateral pressure on the bone in all directions, but nothing availed; and it seemed to me as firmly fixed in position as if three or four long screws had been driven through its thickness, and bound it most closely to the femur. All this time we were acting in the falsely received notion of relaxing muscles by merely keeping their attachments as much as possible approximated to each other, and the leg was most carefully extended on the thigh.

After a long course of trials in this way, it occurred to me, that I might effect some change by giving the bones a sort of shake; for this purpose I slightly bent the leg, and gave a little rotatory motion to the tibia, when the patella quietly returned to its proper situation, as if a charm had released it from its fixed state. The hand of an infant might now have deposited it in its trochlea. The result of the manipulation in this case, led to reflections which opened to my view principles very different from those I had formerly held. It offered a forcible example, that any muscle disturbed in its arrangement, is under great excitement to act. The disturbed arrangement here was the elevation of the centre of action of the extensors above the ordinary position; and as these muscles, in the straight position of the whole limb, are called upon to support a great proportion of the weight of the body, so when in that position they are naturally impelled to exert a vast force. But in obedience to the associated action of combined muscles, when the leg is bent, and another order of motions in this complicated joint is brought into play, then these extensor muscles immediately relax; they would otherwise, by their action, prevent the rotatory motion of the leg upon its axis. Thus the moment the leg was bent, the extensors returned into a comparative state of repose, and left the patella quietly to resume its appointed position. Not very long after the occurrence of the above case, I was called one night to the hospital to a similar one. The house-surgeon had adopted all the means of ingenuity and of force, but had not succeeded in reducing it. I bent the leg, and, rotating it in the axis of the tibia, the patella quietly returned, and thus was accomplished the reduction.

[An article on this variety of dislocation will be found at page 93 of our last volume.—H. A.]

#### SECT. IV.—RARE SURGICAL CASES.

ART. 77.—*Fatal Hemorrhage from the Subclavian Artery in a case of Abscess of the Neck.*  
By WILLIAM JACKSON, Esq., F.R.C.S., Sheffield.

(Condensed from the *Prov. Med. and Surg. Jour.*, July 14, 1847.)

July 16th, 1830, I was requested to visit J. W., æt. 19, whose general appearance presented the characteristic features of scrofula. He had suffered for several months from an extensive swelling of the right side of the neck. His health had suffered considerably by the discharge from two or three openings, which had been established more than a month. I was summoned by an urgent message in the night of the 16th, and found him in a state of syncope, from loss of blood from two or three apertures on the side of the neck. The hemorrhage had ceased, the openings being occupied by coagula of blood. The largest aperture was seated about two inches above the clavicle, and somewhat nearer the sternum than the scapular extremity of the bone. The other apertures were seated more outwardly. The attendants represented the bleeding to have been very sudden and copious, the almost immediate effect of which was complete syncope, and a cessation of the flow of blood. I remained till the patient recovered his consciousness, expecting, of course, a renewal of the hemorrhage; but as he still remained in a languid state, with an almost imperceptible pulse, no immediate measures were adopted for his relief. From the appearance presented by the blood, as stated by the persons present, and from the rapidity of the stream, there could be no doubt but a vessel of considerable magnitude had given rise to the bleeding. The situation of the disease was carefully explored, and there was just reason to infer that the abscess originated from some deep-seated part, most probably from the bodies of the cervical vertebræ. The question presented itself,—from what vessel did the bleed-

ing arise? It might be from the subclavian or the vertebral artery, or the internal jugular vein; for a vessel of inferior magnitude would not pour out blood so rapidly as to sink the powers in so short a time. The pulse became gradually restored, and consciousness returned. The application of cold, rest, and cooling drinks were enjoined.

On the 17th, the circulation had become moderately re-established, and there had been no return of the hemorrhage.

On the 20th, there was a sudden return of the hemorrhage, which, as before, had quite subsided. On my arrival, I found the poor young man deluged with blood, and in a state of insensibility.

The cause was one evidently of unusual occurrence, for all concurred that one of the great vessels in the neighbourhood of the abscess was the source of the hemorrhage. It was generally considered by the gentlemen engaged in consultation, that the hemorrhage proceeded from a part inaccessible to surgery, and that in all probability extensive disease existed, besides the ulcerated artery giving out the blood. Under these circumstances, therefore, no operative means were advised. After the recurrence of hemorrhage on the 22d and 24th, our patient sunk.

*Post mortem.*—The blood-vessels were injected, and it was found that ulceration had occurred in the subclavian artery, as it lies upon the first rib. The rib was in a carious state, as well as the bodies of the contiguous vertebræ. The situation of the ulcerated opening in the artery was towards the bone, and occupied about one-fourth of the calibre of the vessel; the opening was of a somewhat oval shape, and well defined. There was no enlargement of the capacity of the vessel at the part.

#### ART. 78.—*Ligature of the Vertebral Artery.* By Professor CHELIUS.

(Condensed from his *System of Surgery*, vol. ii. p. 249.)

Dietrich has proposed two methods, according as the artery is to be looked for between the *atlas* and *dentata*, or between the *atlas* and *occipital bone*.

I. The head of the patient being inclined to the opposite side, and a little forwards, a cut is to be made two fingers' breadth from the lobe of the ear, or one finger behind the mastoid process, beginning half an inch above the latter, and carried for two inches along the outer hinder edge of the sterno-mastoid muscle. From the upper fourth of this cut a second is to be carried an inch backwards and obliquely downwards. After dividing the skin and some cellular tissue in both cuts, in the first is seen the outer and hinder edge of the *sterno-mastoid*, and in the second the *splenius* covered with aponeurosis. The wound is now to be deepened through the aponeurotic and cellular tissue, and in the second cut the fibres of the *splenius* are to be divided, at which time a small artery will be wounded. A second aponeurotic layer must be divided, and under it pass some branches of arteries and nerves. An assistant, with blunt hooks, holds the edges of the wound apart, and a layer of fat appears, in which is the vertebral artery. At the same time, also, the outer edge of the *obliq. cap. infer.* is seen at the inner edge of the second wound, and is to be drawn somewhat inwards. Two branches of the occipital artery, also inclosed in cellular tissue, pass across the wound. The cellular tissue is now to be divided with the handle of the knife, and the arterial branches drawn upwards or downwards. Two branches of the second cervical nerve show themselves, and are to be drawn up or down; after which the isolation of the artery is no longer prevented. The needle is to be carried round the artery from without inwards, to avoid the internal carotid, which is only separated from the vertebral by cellular membrane.

II. The cuts should be made as in the former case; but the first is to be begun a quarter of an inch above the mastoid process, by which the second cut runs somewhat more upwards. After cutting through the skin *fascia* and *m. splenius*, the occipital artery appears in the upper angle of the first wound, as also at the front edge on the upper fourth, the hind edge of the *m. obliq. cap. super.*; but in the whole surface of the wound a layer of *aponurosis*, and under it cellular tissue, loaded with fat, the former of which must be carefully divided. The edges are to be held asunder with blunt hooks, and then a triangle appears, formed by the

*m. rect. cap. post.* and *m. obliq. cap. super.* and *infer.*, filled with fat and cellular tissue. This is then to be carefully divided, turned back, and, if in large quantity, should be partially removed; upon which the artery appears below the *m. obliq. cap. super.*, and runs backwards nearly an inch before it perforates the occipito-atlantal ligament. The ligature is then passed obliquely from below upwards, to avoid the nerves and vein.

ART. 79.—*Remarkable Case of Emphysema of nearly the whole Body.*

By M. G. PONCE.

(From the Spanish Journal, *Anales de Cerugia.*)

A man, æt. 47, for several years previously affected with chronic bronchitis, received the shock of a bar of iron, from the height of six feet, upon the dorsal region, whilst he was bent towards the ground; the pointed end struck the inferior angle of the scapula, produced a small ecchymosis, and lacerated the skin. From the moment of the injury breathing became difficult, expectoration ceased, fever commenced, violent pain was felt in the wounded part, and the patient became restless and agitated. Sinapisms and resolvents were applied; an antispasmodic drink prescribed: and about 50 ounces of blood were taken four hours after the accident; there were extreme dyspnoea and hissing respiration; icy coldness over the whole body: a considerable tumefaction was formed by the infiltration of air in the subcutaneous cellular tissue, which covered nearly the whole surface of the body. In some parts the infiltration was so great, as to enable one to thrust in the fist. The eyelids were so much swelled, that all light was excluded; the breasts resembled those of a woman of a lymphatic temperament; and the abdomen was larger than in ascites arrived at the last stage. The penis was enormous, but it was remarked that the scrotum retained its normal state. Added to these symptoms, there were complete aphonia and dysphagia. Thirty-three large incisions were made in the emphysematous regions. The air escaped by these openings with a noise which astonished the assistants: as much as possible was pressed from the tissues through the incisions. The patient immediately recovered his speech. About 38 ounces of blood were taken. At the following visit, more air was let out from the wounds, by means of pressure through the punctures. The patient still felt pain in the seat of the contusion; the pulse was hard, with great thirst, and no expectoration (24 leeches). In the night the patient was calmer, and expectorated abundantly. The following day, general perspirations occurred; there was less pain and more fever. The cure was completed by the eleventh day.

The editor of the "Encyclographie" remarks, "the case is very interesting, but the interest is augmented by the obscurity with regard to the origin of the emphysema. It is doubtful whether the emphysema was produced by the ecchymosis and laceration of the skin. This is the author's decision, but is, however, without proof or certainty. On the other hand, there is nothing to show that the origin of the emphysema was not the rupture of some pulmonary vesicles, or perhaps a fracture of the ribs, the ordinary cause of emphysema, but the absence or existence of which, in this case, is not mentioned. The uncertainty can be easily understood, as an emphysema of this nature, and to such an extent, produced by a cutaneous lesion of so little importance, is a very rare occurrence."

ART. 80.—*Case of Mortification of the Lower Extremity from Spontaneous Obliteration of its Arteries in a young subject—Amputation twice—Ossific Transformation of the Femoral Artery—Recovery.* By ALEXANDER FIDDES, late Surgeon to the Kingston Dispensary, Jamaica.

(*Monthly Journal of Med. Sciences*, March 1848.)

Alexis Sequeira, æt. 23, came first under my care two years ago, complaining of his left foot. It was painful, had a livid colour, and felt colder than its fellow. The small toe was black, dry, and insensible. Over the course of the tendo-Achilles there was the cicatrix of an ulcer, which had proved very difficult to heal; and partly from this, partly from a contracted state of the muscles of the calf, there was a permanent elevation of the heel, so that, in walking, he touched the



ground only with the anterior part of the sole. Under the use of poultices, the mortified toe separated, the wound cicatrized, and by rest and other sedative measures, he felt altogether so much better, that I took my leave, and saw nothing more of him till the middle of August, 1847, when I was a second time requested to see him. He then informed me that, though the limb had always felt more or less stiff and painful since my former attendance, yet it had not prevented his walking abroad until lately, when a black spot made its appearance where the toe had been, and the pain, at the same time, became so aggravated, and the whole limb so stiff and contracted, that he was obliged to keep his bed. The foot felt cold and clammy, and was purple-coloured. The cicatrix above the heel had ulcerated, and all the muscles of the limb were rigid and painful on being pressed. On examining the course of the arteries with the fingers and stethoscope, no pulsation could be detected in that side from the foot up to the aorta's bifurcation. There was nothing morbid in the heart's action, or in the circulation on the opposite limb. During my subsequent attendance, extending to a period of two months, matters became daily worse. The temperature of the foot and lower part of the leg was always below the standard heat of the body. The muscular contraction increased until the leg was bent at a right angle with the thigh, and the thigh drawn up upon the pelvis. Gangrene seized all the toes in succession, and spread progressively along the foot. The ulcer above the heel showed a proneness to slough. The pain became almost insupportable, prevented sleep, and was hardly allayed even by liberal doses of opium. The mouth became covered with aphthous ulceration, and hectic irritation set in. On the 19th of Oct., the gangrene had extended close to the ankle-joint, without showing any attempt at a line of demarcation, and his powers had become so depressed, as to make it obvious that he would soon sink, unless relieved of the cause of irritation.

Impelled by the urgency of his condition, but without sanguine expectations of ultimate success, I amputated the limb that day, close under the knee, with the concurrence and assistance of Dr. Charles Campbell and Dr. James Scott. The skin, fascia, and muscles constituting the flaps looked sound, but there was no bleeding, beyond slight oozing, nor could any artery be recognised on the cut surfaces. The integuments were stitched together, and a roller loosely applied. On dissecting the removed limb, the arteries were found to have lost all trace of their tubular formation, having degenerated into tough, yellow-coloured ligamentous bands. The veins were unobstructed, but diminished in calibre, thickened in their coats, and morbidly adherent to the surrounding parts. They consequently did not collapse when cut across, but remained open like an artery.

October 21st. On removing the dressings this morning, the whole anterior flap was gangrenous; some febrile disturbance; stitches removed; hot-water dressings.

November 10th. All the mortified parts have separated, exposing the tibia and fibula, denuded of periosteum. There has been no sloughing in the posterior flap, which is now granulating. Sleeps and eats well. General health greatly better. Muscles of the thigh have lost their spasmodic rigidity, and are not painful on being pressed. There is consequently greater freedom in the movements of the hip.

December 11th. Progressive improvement in general health. The exposed condition of the bones rendering the stump unfit for any useful purpose. I amputated this day in the middle of the thigh, by antero-posterior flaps. The cut surfaces oozed freely, and two arteries required to be tied; one was a muscular twig; the other, a considerable branch, ran in the centre of the great sciatic nerve, and required to be carefully pulled out, to keep the nerve clear of the knot.

Dec. 14th. Stump dressed; no uneasiness or discharge; seems well united.

Dec. 16th. Stitches removed; perfect adhesion of the integuments, except a small aperture through which the ligatures hung; adhesive straps applied.

January 5th, 1848. He called at my house this morning, walking well with his wooden leg. Being in excellent health, he is anxious to resume his avocation. The stump shows no sign of imperfect circulation. When the amputated portion of limb was dissected, the femoral artery, as low as the knee, was found to have undergone an osseous transformation; but, unlike the calcareous degeneration of the aged, it consisted of a chain, or series of pieces of bone, white, spiculated,

and compact, having physical properties similar, in all appearance, to natural osseous tissue. These were deposited in and linked together by a yellow fibrous substance, similar to that which occupied the room of the arteries below the knee. This was evidently the matrix in which they were generated and developed. Some of these ossific bodies are an inch long, and nearly half an inch broad. They resemble the long deposits sometimes found in the *fulx major* and other processes of the *dura mater*. The femoral vein presented similar appearances to the veins described above.

*Remarks.*—The transformation of the femoral artery observed in the present case, may be considered, I think, as a disease *sui generis*; for it does not appear analogous to the senile generation, but distinct from it in structure and mode of growth. Though lower in the scale of organization than the tissue which it has supplanted, it is, nevertheless, capable of carrying on its own nutrition; and it seems probable, if a collateral circulation could be established in cases of this kind, that the arterial trunk thus transformed would remain throughout life without causing disturbance, or falling under the operation of that law by which foreign and injurious substances are expelled from the body. On the other hand, the calcareous degeneration of the old man has no title to the rank of a vascular organized structure, being merely a deposit of earthy matter between the tunics of the artery, retained mechanically as an incrustation, and which, sooner or later, operates destructively, as a foreign body, upon the vessel. Both these morbid alterations have, of course, an obstructive effect on the circulation, and produce a liability to chronic gangrene—in the one, the arterial canal must always be obliterated; in the other, the vessel, though inelastic, may be still pervious, and capable of transmitting the stream of blood. In old persons the calcareous degeneration takes place without any apparent inflammatory action, as a natural consequence of age, or from a pathological state of the fluids, similar to that which produces the gouty and urinary deposits, as has been ingeniously supposed by Andral; but the ossiform transformation appears to be the result of an antecedent arteritis. The first step in the morbid process towards its formation being occlusion of the arterial canal by coagulable lymph, conversion into a dense fibrous structure, then, by a continuance of the inflammatory action, ossification; for it has been fully ascertained by observation of disease, and by experiments, that chronic inflammation in fibrous tissue induces its ossification. This hypothesis of the osseous transformation, then, has the support of analogy, although, as Andral observes, we perhaps express as much as we know of the origin of accidental osseous formations, when we say that they are produced by a perversion of nutrition. Although amputation was performed in opposition to the established principle, which forbids such a procedure in idiopathic mortification, so long as there is no line of separation between the dead and living parts, yet I am convinced that this young man's life was saved by the departure from that rule of surgery.

It would probably have been more judicious to have amputated in the first instance above the knee, as the flaps there, from their thick and extensive attachments, and proximity to the centre of circulation, would have had a better arterial supply than the flaps below the knee had in the first operation. This is made probable by the fact, that while the thin integumentary flaps on the anterior surface of the leg perished, the thick and muscular one taken from the calf retained its vitality completely. The iliac trunk being obstructed, the circulation must be carried on chiefly through anastomoses between the lumbar arteries and ramifications of the gluteal and ischiatic, that had escaped obliteration.

[Interesting articles on the subject of dry gangrene, senile gangrene, &c., will be found in the "Half-Yearly Abstract," Vol. III., pp. 80, 84, and 181; and Vol. V., p. 92, by Dr. Binaghi, Professor Tiedemann, and Mr. H. Fuller. The reader is also referred to Mr. Soilly's remarkable case in the "Med. Chir. Trans." vols. xxii. and xxiii. In this case a morbid state of the blood was the most probable cause of a universal gangrene of the limbs.—H. A.]

ART. 81.—*Abscess of the Tongue ending fatally from Hemorrhage.*  
Related by Mr. WARD.

(*London Medical Gazette*, Nov. 12th, 1847.)

E. T., aged 7, was born with a slight red enlargement in the centre of the tongue. No inconvenience or difficulty in the ordinary motions of the tongue, or in swallowing, had ever been experienced. The general health had always been good. In the night of Sept. 27th, 1847, having been in her usual health at bedtime, she was attacked with pain and swelling under the chin and both sides of the lower jaw, slept very little, and the following morning had pain in the tongue, with great difficulty in speaking, or swallowing anything but liquids. She had an aperient powder at night, and the lower jaw was fomented frequently. In this state she continued for two or three days, and was first visited by me on Oct. 1st, when the following appearances were noticed: face flushed, eyes very bright, countenance anxious; great swelling, redness, and extreme tenderness of the parts under the lower jaw; very slight swelling of the tongue itself, which is covered with a thick, brown fur; is unable to open the mouth wide, or move the tongue beyond the teeth, or to speak, and has great pain in the mouth: pulse very quick and sharp; great heat of skin, and thirst urgent; bowels confined. Ordered eight leeches to be applied under the chin: to take, at bedtime, four grains of calomel, James's powder and sugar, of each three grains; a saline mixture, containing a scruple of nitrate of potash; one table-spoonful every three or four hours.

Oct. 2d. Slept more last night than since first attacked; fever great; pain slightly relieved; swelling and redness less; mouth nearly closed; was able to swallow the powder in jelly, but refuses the mixture, of which very little has been taken; bowels freely relieved; evacuations dark and offensive. To take calomel and James's powder, of each three grains, and jalap, five grains, at bedtime; use a chloride of soda gargle, warm, to the mouth, by means of a syringe. Fluids taken in the mouth return by the nose.

4th. Less fever: rests better at night; difficulty in swallowing, or speaking the same; can open the mouth sufficient to allow the tongue to be seen, which is nearly fixed, very little swollen, and still thickly coated: the breath extremely fetid; external swelling and redness still considerable, the tenderness great; pulse soft, quick, and weak; the bowels act freely: was able to pass my finger into the mouth. Under each side of the tongue distinct fluctuation can be felt. While pressing on the left side, the lining membrane gave way, and was followed by a profuse discharge of fetid pus, mixed with blood. The point of the finger passed easily to the depth of the first joint under the tongue, giving the sensation of a large pulpy cavity. The tongue not very tender, can be moved from side to side, by means of a small tea-spoon, but not voluntarily. Apply strong poppy fomentation frequently, and lin-seed poultices. Continue the chloride of soda gargle under the tongue, with the syringe, and take of a mixture consisting of six grains of quinine, a tea-spoonful every four hours. Give a little port wine and water frequently, and milk, or thin arrow-root for drink.

6th. The pain less since the use of the poppy fomentation, generally sleeping for some hours after using it; the discharge of pus and saliva very copious and offensive; lies with the head on the left side, to allow the free exit of the discharge, otherwise the mouth is constantly filled; fever less, as also the swelling and tenderness; redness gone; great debility, and considerable wasting of the body already; can swallow fluid, and is eager for the wine; very little of the quinine has been taken; bowels act twice a day; can open the mouth wider, but is still unable to protrude the tongue, which is cleaner and moister; on slightly raising it by the handle of a spoon, a large jagged opening may be seen on the left and under side of the lower jaw, from which, by gentle pressure under the chin, a profuse discharge of thick pus swells up, of which I pressed out at least two ounces; pulse soft and weak. Continue the external applications; apply the chloride-of-soda gargle frequently to the mouth and under the tongue, with the syringe; take a mixture consisting of two ounces and a half of decoction of bark, syrup of orange-peel, and tincture of bark, of each two drachms, a fourth part three times a day; continue the wine, and give strong beef-tea and arrow-root frequently.



9th. Altogether improved; discharge less, but still fetid; takes fluid nourishment frequently, and the wine; the general swelling and tenderness reduced, more on the left side under the jaw than the right; and is unable to protrude the tongue further. Continue all the applications and the mixture.

11th. Has not rested so well the last two nights, and has had more pain, particularly on the right side, which is more swollen, and very tender, the left side being almost in its natural state; the discharge has been profuse, but thinner: the tongue is moist and clean, not very tender, but less moveable; the opening under the left side of the tongue smaller; fever returned; has constant hacking cough; not able to swallow so well, or to speak as to be understood.—Apply six leeches under right side of the lower jaw; continue the fomentation and poultices; also bark mixture and port wine.

12th. Has slept very little, from the frequent coughing, which tires her very much. Discharge from the mouth less, and thinner, but still fetid; emaciation extreme, has changed the position of lying to the right side; left angle of the mouth drawn down; the swelling and tenderness on the right side very much increased since yesterday; feels soft; is more prominent in the centre, and appears pointing here. The finger in the mouth can detect very distinct fluctuation under the tongue, which is thickly coated, and very tender. Takes very little nourishment; only a tea-spoonful at a time; prefers wine to other things.—Continue the fomentations and poultices.

13th. Has had a bad night: is very irritable and feverish; mouth nearly closed; unable to examine the tongue: the swelling about the same; the right cheek and under side of the jaw of a dusky red colour, and very shining, so tender that she has again changed the position, lying on the left side; cough less; pulse very small and weak; takes scarcely anything; discharge more copious, thicker, and slightly tinged with blood; it now appears to come from the right side. In the evening, while coughing, a large gush of blood took place from the mouth, mixed with pus, and flowed freely for more than ten minutes. By applying ice internally (which I had directed to be in readiness), the hemorrhage was arrested. A cold lotion was applied externally, and an alum gargle frequently to the mouth.

14th. Has slept very little; unable to lie down, from the constant discharge of fetid pus and saliva from the mouth: the swelling of the right cheek and side of the jaw less: very tender, of a dull yellowish colour; able to open the mouth so as to examine the tongue, which does not appear enlarged; no power of moving it herself: is thickly coated with a dark fur, and when pressed upon, a profuse discharge of thick pus fills the mouth immediately; no return of the hemorrhage; is very pale and faint: pulse very small and weak; has taken more nourishment since last night than for some days before, such as port wine, isinglass in milk, beef-tea, jelly, &c.—Continue the lotion and alum-gargle to the mouth with a syringe. At half-past 7 P.M., in the act of swallowing a small piece of bread and butter, profuse hemorrhage occurred from the mouth, and more than a pint of blood was lost before it was again arrested by the free application of ice; it was of a bright arterial colour. She became faint, and expired at 9 P.M.

On the following day I made a post-mortem examination of the parts affected. The parotid, sub-maxillary glands, and other parts, having been brought into view, were found (on the right side) so much softened, decomposed, and mixed with coagulated blood and pus, as to be recognized with difficulty, and it was impossible to trace from what vessel the hemorrhage had proceeded, such was the destruction of the parts. On the left side, the glands were of a greenish colour, very much softened, and bathed in pus. A probe passed readily by the side of the jaw into the mouth. I divided the trachea just above the sternum, and dissected the larynx and tongue carefully out. The morbid state of the tongue is shown in the preparation before the Society.

ART. 82.—*Elephantiasis Scroti*.—In 1837, October 3, Dr. Picton, of New Orleans, operated upon a negro of that city, excising the scrotum, which weighed 53 pounds. The testes were saved. The man is still alive, in fine health, and, as recently as five weeks ago, became the father of a child. Knowing that many gentlemen are solicitous to learn the condition of the patient, we take pleasure in presenting these facts.

## PART III.

# MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

### SECT. I.—MIDWIFERY, AND DISEASES OF WOMEN.

ART. 83.—*On the Causes of Abortion.* By Dr. TYLER SMITH.

(*Lancet*, April 15, 1848.)

[Dr. Tyler Smith investigates the subject of abortion under the new light afforded by the important discoveries of Marshall Hall. He accordingly divides the causes into two categories, *excentric causes* and *centric*. Respecting the first class, he observes:]

1. *Excentric causes of abortion.*—Irritation of the *mammary nerves* may produce abortion, as in cases of undue lactation, complicated with a second pregnancy. Cases occur in which, during prolonged lactation, two or three conceptions and abortions follow each other, the latter being caused by the irritation of constant suckling. The question naturally suggests itself,—whether it is not the constitutional debility, rather than the local irritation, which induces abortion in these cases; and there can be no doubt that this, like many other anæmic conditions, may help to produce the accident. There is, however, over and above this, mammary irritation as a distinct cause. I have observed cases in which, owing to the synergic action between the uterus and the breasts, the secretion of milk had been almost entirely arrested by conception, the infant being chiefly supported by feeding. The child would still suck most vigorously, in its attempts to obtain milk, until the uterus was excited to the expulsion of the ovum, and after the abortion has occurred, the secretion of milk returns abundantly. Such cases are very different from those in which the breasts are dried up from debility. If the synergic relations between the *mammæ* and the uterus required any more obvious proof, I might refer to cases on record in which actual metritis has been caused by the application of sinapisms to the breasts in amenorrhœa. It is important to recognise mammary irritation as a cause of abortion in the early months, because it may be mistaken for a profuse menstruation; and the woman, misled by the subsequent profusion of milk, may allow of its recurrence, and so suffer constitutional injury. It is curious that irritation of the stomach, between which and the uterus there is such a distinct relation, should *not* produce abortion. After parturition, the slightest gastric irritation will excite contractions of the uterus; but during pregnancy, gastric irritation and sickness even to death may occur without disturbing the *fœtus* in utero; on the contrary, sickness seems positively favourable to the continuance of utero-gestation. The synergies between the lungs and the uterus are equally remarkable. The uterine phenomena of utero-gestation retard the progress of pulmonary disease, but if the most extensive disease of the lungs exists, it does not excite abortion. An amount of pulmonary disease sufficient to cause death a few days after delivery, may exist without any interruption to the natural duration of pregnancy.

Irritation of the *trifacial nerve* will sometimes excite abortion. It happens when no other cause can be recognised but the appearance of the *dentes sapientię*, and

this phase of dentition is well known to produce considerable local and constitutional disturbance. General convulsions may, in fact, be excited from this source, either in the male or female subject. The reflection of irritation from the trifacial upon the uterine nerves, in young pregnant women, is no more remarkable than the strangury excited by teething in the infant. Extraction of decayed teeth during pregnancy is another cause of abortion in which the trifacial is concerned. There is a well-known synergy between the uterine system and the teeth during pregnancy, leading to toothache and caries: and there is also a tendency to reflex action in the direction *from the teeth to the uterus*. These facts and their rationale require to be borne in mind in the management of pregnancy.

Irritation of the *vesical nerves* is, in rare instances, a cause of abortion, as when patients conceive who are the subjects of chronic vesical irritation, or when there is stone in the bladder. The uterus itself reflects irritation upon the bladder during pregnancy, so as to exaggerate the effects of any primary vesical irritation which may exist.

Irritation of the *ovarian nerves* is a very frequent and important cause of abortion. It is a well-recognised fact, and one upon which I had often had occasion to dwell, that the majority of cases of abortion occur at what would have been menstrual periods. In such cases it is the ovarian nismus, and the attendant irritation of the ovarian nerves, either alone or combined with other causes, which excite the uterus to expel the ovum. The ovarian excitor nerves act in such cases in just the same way as they act in bringing on natural labour at the completion of the full term of pregnancy. Almost all women can perceive the menstrual periods as they pass through utero-gestation, particularly at the first three or four periodic dates. Those who have suffered from menorrhagia or dysmenorrhœa, or in whom organic ovarium disease has existed before conception, recognise the menstrual nismus most clearly, and it is precisely in these subjects that abortion is most likely to happen. Abortion in the early months is common during the grand catamenial climacteric; it constitutes, in fact, one of the chief dangers of this epoch. In all cases of abortion, caused by irritation of the ovarian excitor nerves, the most common time for the occurrence of the accident is at the second, third, or fourth periods, but it may happen at any one of the periods. In cases where the abortion depends upon irritation of other excitor nerves, or upon erythismus of the spinal centre, the periodic ovarian irritation often determines the time of the accident.

Irritation of the *rectal nerves* is a common cause of abortion. This variety of abortion is obvious when the accident occurs from hemorrhoids, or from operations for their removal: the presence of ascarides in the rectum: the employment of irritating purgatives, particularly aloes, in excess, or the use of irritant enemata, or from the occurrence of severe diarrhœa or dysentery during pregnancy: obstinate and long-continued constipation, or any other great irritation of the lower bowel and its excitor nerves, may occasion abortion.

Irritation of the *vaginal nerves* sometimes excites abortion. Plugging the vagina is one of the means resorted to for the artificial production of premature delivery; the mechanical irritation of coitus will sometimes produce abortion, and this cause must be divided between the os uteri and the vagina. In cases of threatened abortion with hemorrhage, the danger of the accident is sometimes increased by the plugging of the vagina resorted to in order to arrest the loss of blood. This fact should always be borne in mind when the plug is resorted to in hemorrhage of any kind occurring during utero-gestation. It is possible that in arresting the hemorrhage we may ourselves cause abortion.

Irritation of *uterine nerves* is, beyond doubt, the most important of all the causes of abortion. Abortion may occur without any other apparent disorder of the ovum or the uterus, except an absence in the uterus of the proper disposition to growth or development. The uterus will grow to a certain size, and then an arrest of development appears to take place, which ends in the expulsion of the ovum. In other cases the fœtus dies, and becomes a foreign body, directly irritating the uterus to throw off its contents. This cause of labour involves the whole subject of intra-uterine pathology, and of all the disordered condition of the fœtus, membranes, and placenta. The separation of the membranes from the walls of the uterus, and the effusion of blood, or disease of the placenta, are important causes of abortion.



Puncturing the membranes, and bringing the *fœtus* in direct contact with the parietes of the uterus by the evacuation of the liquor amnii, will excite abortion in the same manner. In the abortion excited by violent horse or carriage exercise, the accident depends on the mechanical irritation of the os and cervix by the *fœtal* head, in consequence of the succussion. In principle, the abortion caused by equestrian or carriage exercise is precisely the same as the ovi-position excited in the *tipula* or *libellula*, by shaking these insects upon rough paper. Irritation of the os uteri by coitus; the use of the plug; vascular irritation and inflammation; ulceration of the os and cervix, will, if continued, excite reflex actions of the uterus, terminating in the loss of the ovum. Another uterine source of abortion is the implantation of the placenta over the os and cervix uteri. The presence of the placenta in this abnormal situation excites the uterus from within, in the same manner as the plug from without; hence the frequency with which placenta-*prævia* cases terminate in premature delivery. When speaking of ovarian irritation as a cause of abortion, I mentioned that this danger chiefly occurred during the early months of pregnancy. In placenta *prævia*, on the contrary, owing to the greater development of the placenta, and the anatomical changes occurring in the os and cervix uteri as pregnancy advances, the danger of abortion in these cases increases with the duration of pregnancy. Different tumours, malignant or non-malignant, attached to the os and cervix, or to the parietes of the uterus, when they excite abortion, act after the same manner. To the long list of uterine irritations issuing in abortion, I may add injuries of the uterus itself from external violence, and inflammatory disease of the uterine tissues.

All these causes, it will be observed, whether vaginal, mammary, vesical, rectal, facial, or uterine, are purely excito-motor in their operation. The irritation is applied to the excitor nerves, and reflected through the spinal marrow upon the motor nerves and the uterus. It often occurs that two or more causes are in operation at the same time. The reflex contractions of the uterus which constitute abortion are not excited, as in the case of respiration or vomiting immediately on the application of stimuli. If cold water be thrown upon the breast, the movements of inspiration—if the fauces are irritated, the movements of vomiting—are instantly produced. But it is not thus in the case of the uterus. Though this organ is so distinctly under the control of the spinal marrow during, and immediately after, labour, so distinctly, indeed, that asperging the abdominal surface soon after delivery produces instantaneous uterine contractions, yet, during pregnancy, no reflex actions sufficient to cause abortion follow immediately upon the application of the ordinary stimuli of excito-motor action. It requires that the nervous arcs in relation with the uterus should be irritated for a considerable time, and an excitable state of the uterine nervous system is then produced, during which reflex actions are readily excited by slight causes.

All the excito-motor causes of abortion are, in fact, imitations of the ovario-excitor cause of natural parturition at the end of the utero-gestation, only in many cases, instead of the ovarian nerves being the inducers of the uterine nervous excitability which terminates in premature expulsion, it is the mammary, vaginal, rectal, &c. In the instances where ovarian irritation is the cause of abortion, the cause of abortion is precisely the same, and acts in the same manner as the cause of natural labour, the only difference being that of the *time*. I have said that oftentimes more causes of abortion than one are in operation; thus uterine irritation may produce the irritability or excitability of the uterine nervous system, but before this irritability has actually produced expulsion, irritation of the rectum may step in and complete the abortion.

[After some physiological remarks insisting upon the reflex character of the above nervous phenomena, the author proceeds to the consideration of the *centric* causes as follows:]

2. But besides the causes of abortion involved in physical irritation of spinal excitor nerves, there are other causes in which the circulation and the spinal centre are chiefly concerned. There are certain erythematic conditions of the system in which abortion is very prone to occur. These are, the exanthemata, particularly smallpox and syphilis, in each of which a special poison is introduced into the blood: the pyretic state of the system which obtains at the commencement of the non-specific fevers and simple inflammations of the viscera, is attended with simi-

lar danger; the scrofulous diathesis, too, has been considered as prolific of abortion as the syphilitic; but, I believe, with far less justice. The inhalation of carbonic acid rapidly excites abortion, and during accidental or intentional poisoning by this gas, the ovum is often found expelled. During the celebrated razzia in Algeria, in which a great number of Arab women were suffocated in the caverns of Dahra, those of them who were pregnant were found to have aborted. Military histories offer examples of the same kind in other countries. I believe the retention of noxious elements in the blood, in the albuminuria of pregnancy, to be a cause of abortion as well as puerperal convulsions. There are also certain specific agents, as the essential oil of savin and the ergot of rye, which, if persisted in, are adequate to cause abortion; and, lastly, all the agents recognized in toxicology may cause abortion, as well as the destruction of the parent, when administered during pregnancy. In all these instances, the blood is the medium by which the exciting agent is conveyed to the spinal centre. They are precisely similar to the artificial abortion which may be excited in the lower animals by direct mechanical irritation of the spinal marrow.

Another important cause of abortion, acting through the spinal centre, is *emotion*. This cause, unlike those which reach the spinal centre, by the blood, is purely *psychical* in its nature. The influence of emotion in causing the uterus to evacuate its contents, is as undoubted as the influence of emotion upon the stomach or upon the rectal and vaginal sphincters. But, as in the case of uterine excitomotor action, ordinary emotion does not affect the uterus instantaneously. Time is required for the effects of emotion to develop themselves into uterine excitability. The rapidity with which emotion affects the uterus is proportionate to the intensity of the emotion. A violent fit of anger, serious fright, or intense grief, may lead to abortion a few days after the violence of the emotion has disappeared. During religious persecutions women have aborted suddenly at the stake; and here the emotion produced by excessive terror would probably be the chief cause of the accident. Thus emotion may, under extreme circumstances, act upon the uterus, and produce abortion, even more readily than ordinary excitomotor causes.

[In the history of abortion, the author considers that there has been too general a tendency to attribute abortion to a universal cause; he alludes more particularly to the views of Dr. Bennet and Mr. Whitehead, already mentioned by us in a former volume, without, however, meaning to undervalue their researches.]

#### ART. 84.—*On Retroflexion of the Womb.* By MR. HENSLEY.

(*Prov. Med. and Surg. Journal*, Jan. 12, 1848.)

[Until comparatively recent times, the above-named displacement of the impregnated womb has been but little known, and even now its existence is either unknown or disbelieved in by the majority. Among the latter we confess that we were numbered until very lately, when we had the opportunity of being convinced of the reality of the affection, through the kindness of Dr. Protheroe Smith, who has contributed much to its elucidation. The affection has also been the subject of researches by Dr. Simpson, of Edinburgh, and indeed it is chiefly by the aid of his uterine sound that a correct diagnosis can be established. The symptoms are thus laid down by Mr. Hensley (see Report):]

In some cases no appreciable symptoms are produced, except perhaps a greater flow of the menses, and a greater tendency to abortion in the married female; whilst in others the symptoms are exceedingly distressing and complicated. It is, in most cases, difficult to trace the first origin of the affection; but in some instances, in which diligent inquiry has succeeded in doing so, the patient would appear to have been cognizant of some depression or falling down of the body of the womb, sometimes occurring suddenly, in other instances more gradually progressing—in the former, producing alarming sympathetic affections, as nausea and vomiting, and actual syncope, together with more or less pain referred to the groin or sacrum. The retroflexion, increasing or becoming permanent, produces some pain and difficulty, or frequency in micturition, though it never leads mechanically to retention of urine. The patients complain, likewise, of a dull, aching, constant pain in the sacral region, probably from the pressure of the

fundus uteri on the sacral nerves. The pain shoots down one of the thighs, and there is a sense of weight in the rectum, much increased by the act of defecation. If the disease is not recognised, more serious symptoms appear. Menstruation becomes painful and more profuse, and clots and shreds are voided; in short, dysmenorrhœa is set up. The general health, at the same time, suffers more or less; the stomach becomes disordered, the bowels constipated, the spirits depressed, and hysterical symptoms are apt to occur. These symptoms, though they do not prove the existence of displacement, warrant an examination per vaginam, by which alone the displacement can be determined and rectified.

In examining a case of retroflexion during life, the finger reaches a firm, globular mass, situated behind the cervix uteri, between the rectum and vagina. This is the fundus uteri bent downwards and backwards. The os uteri, instead of being tilted upwards and forwards, as in retroversion, is little, if at all, removed from its natural situation. At first we may not be able to determine this globular mass to be connected with the uterus at all. It may appear to be merely a scybalous accumulation in the rectum; hence we should, if possible, before examination, exhibit an aperient. In other cases, the tumour may be too high to trace its continuity. The exact situation may be traced per rectum.

It is, however, by the use of the uterine sound that we can obtain sure and valuable information of the displacement of the womb. In a case of retroflexion, on passing the instrument in the natural direction upwards and forwards, it becomes almost immediately arrested; but on turning its point in the contrary direction, backwards and downwards, it will pass readily along the cervix uteri, and then glide downwards and backwards to its full extent of two inches and a half. The point can now be felt distinctly in the centre of the tumour, through the posterior wall of the vagina, or the anterior of the rectum; thus proving it to be the fundus uteri in this unnatural position. Nor is this all. By turning the instrument gradually and gently round, so as to bring the point upwards and forwards, at the same time assisting the elevation of the fundus with the forefinger of the left hand, we shall find that the tumour disappears, it can no longer be felt, the fundus is restored to its natural situation, and retained there by the sound without it. The patient will often be immediately relieved from the constant pain and uneasiness from which she has previously suffered in the sacral region.

The examination and passage of the sound produce in many instances little or no pain, until we elevate the fundus, when the instrument, pressing on the ovary, which we shall afterwards see is extremely apt to become congested and inflamed, in consequence of the displacement, occasions severe pain, which, however, immediately ceases on our completing the restoration. In the examination per rectum, the pressure of the finger on the fundus above occasions no pain, but if we elevate it, the patient immediately complains; and by passing the finger beyond the depressed fundus, we can discover the exact seat of pain to be the posterior and upper part of the fundus, in the situation of the ovary, which we can often feel as an oval body. These last symptoms are dependent on the inflammation of the ovary, and cannot, therefore, be regarded as essential to retroflexion of the uterus, but as the consequence of a complication. It occurs, however, sufficiently often to render it advisable in all cases of oophoritis of long standing, to examine carefully into the position of the uterus.

[The *predisposing causes* of retroflexion are stated to be congenital malformation, relaxation of the tissues, frequent abortions. The exciting causes are accumulations in the bowels, falls, violent efforts, &c. Mr. Hensley next remarks upon the serious consequences likely to ensue if the disease is not recognised; such as engorgement of the fundus, congestion and ulceration of the cervix, inflammation of the ovary, and possibly development of fibrous tumour. The treatment is alluded to as follows:—]

In the first place, the causes should be removed; the bowels must be unloaded, and kept gently open by saline aperients; the general health improved by alteratives and tonics; local engorgements relieved by leeches applied to the anus, or to the os and cervix uteri, followed by the warm hip-bath. The fundus must then be replaced by the uterine sound, and the patient enjoined to remain in bed on the side for some days. If the fundus remains in its proper position, so much the better; astringent injections will be all that is required. If otherwise, the uterus



must be again restored; and perhaps, by keeping the sound a short time in it, we may overcome the tendency.

Should this means fail, we must employ the uterine supporter devised by Professor Simpson, an instrument which consists of a metallic or ivory pin, the length of the uterine cavity (two inches and a half), fixed in a disc or button, on which the os uteri rests, connected with and kept in position by a little frame, resting on the mons veneris, and which is properly fastened by tapes. Dr. Rigby improved this instrument by making the pin flat instead of round, and broader at the extremity, so as to adapt it to a larger surface, and by employing ivory instead of metal. Dr. Simpson had removed the objection of corrosion being produced by the secretions, by having the metal electro-gilded. The instrument should be adapted while the patient is in bed, and she should be kept quiet for some days, till the uterus becomes accustomed to its presence. I have known peritonitis induced by the neglect of this precaution, the patient having walked home some distance. Where, however, the patient is cautious in her movements, and disposed to follow the directions of her medical attendant, the instrument may be worn for months without inconvenience, and excites less irritation or discharge than the ordinary pessaries. The instrument is generally required to be worn a month or six weeks to effect a cure; after wearing it a short time, the patient is able to take moderate exercise.

Dr. Simpson has another instrument for the same purpose; it is a species of pessary, to which he has fixed a hinge, by means of a spring, like the blade of a knife; but this I have never used nor seen.

ART. 85.—*Retroflexion of the Uterus*.—Dr. Beatty remarks that the part of the uterus at which this deflexion takes place is that at which the neck and body of the organ join; and the angle at which the body is bent upon the neck varies, being sometimes very acute, and at others more obtuse. The displacement is most commonly the result of pregnancy; it could scarcely, if at all, occur during gestation, owing to the fulness and tension of the uterus; but in most cases it occurs subsequently to delivery. Velpeau saw fifteen cases in which it occurred in the unimpregnated uterus, but after parturition. Dr. Davis is of opinion that this incurvation may have occurred congenitally, as the effect of an originally imperfect development, or as a result of disease, either of the uterus itself, or of the organs in immediate contiguity to it; but he gives no cases of either kind. This displacement is very different from retroversion, in which the os and cervix are thrown upwards; but in retroflexion these parts maintain their natural position, while the fundus is thrown downwards. The time at which this displacement occurs is most probably immediately after delivery, when the uterus is still large, but soft and pliable. It is likely, however, at the time of its occurrence, because the very urgent symptoms do not manifest themselves until the woman rises from her bed, and resumes her usual employments: then it is that gravity causes the pressure to be felt by the surrounding viscera, and the symptoms declare the nature of the malady. It generally happens, however, that the sensations are endured for a long time without complaint, in the hope that they will subside as the woman regains her strength. The organ, by this delay, becomes fixed in this unnatural position; a certain amount of chronic inflammation alters its tissue, and moulds it into its new shape, rendering all attempts at its restoration alone by mechanical means fruitless. A more favourable prognosis may be formed when the cases are recent, from the ease with which they can be rectified. The means to be adopted are those employed to restore a retroverted uterus; and, after the organ has been placed in its proper position, great care should be taken to keep the patient lying as much as possible on her face, until the uterus has shrunk into its original size. Some practitioners consider chronic deflexions totally incurable by any efforts of art exclusively, without the aid of nature, as exerted during the changes and developments which are the special attributes of pregnancy. The altered conditions of the tissue and texture must be attended to, and the chronic inflammation must be combated by appropriate treatment. The symptoms attending this complaint are dragging pains in the loins, groins, and back, aggravated by walking, or making any violent effort. Pain and difficulty in defecation, and during the attempt a sensation is experienced as of something blocking up the passage, and

preventing the exit of the contents of the bowels. Sometimes there is an irritable state of the bladder, also menorrhagia and leucorrhœa to a considerable extent.

*Dublin Quarterly Journal, Nov. 1847.*

ART. 86.—*Ulceration of the Living Membrane of the Uterus.—Pregnancy advancing to the Seventh Month.* By CHARLES CLAY, M.D.

(*Obstetric Record, No. 7.*)

[We have, in a former Volume (Vol. V, p. 242), recorded a case adduced by Dr. Ramsbotham, and considered by him so rare as to be only the fourth placed in the annals of science. Dr. Clay, in narrating the present case, takes the opportunity of expressing his belief that the disease is not so rare as is represented, and alludes to several references which he considers to indicate an acquaintance with its pathology. The case he now relates he considers unique in the fact of being accompanied by pregnancy.]

About the end of the year 1846, I was called upon to attend Mrs. M——t, a lady who had been under previous treatment for two years, for uterine disease. Her history of the case was, that at first the symptoms were trifling, but afterwards gradually increased in severity. The case had been under the care of various medical men, all of whom agreed in opinion "that the os and cervix uteri were ulcerated." The principal symptoms before my attending the case were occasional and excruciating uterine pains; the uterus itself considerably enlarged, and of a soft spongy feel; its size twice that of a large orange; when pressed upon over the pubic region, was painful to the touch, which pain was increased when the os and cervix uteri were examined, per vaginam, by means of the finger. Whenever such examinations were instituted, they were followed by severe pain and increased discharges. These were irregular, and sometimes small in quantity, so that frequently for days together they appeared as if about to cease. Such cessation, however, was always accompanied by these concomitants, viz., enlargement of the organ, greater pain and tenderness, and a sudden discharge of accumulated matter. When this last occurred in any quantity, it was invariably streaked with blood. The character of the matter discharged was most decidedly pus, and highly fetid. The constitution suffered severely, the countenance was sallow, the body emaciated, and the patient so weak, that it was with great difficulty she could move about the room. Every method of treatment that could possibly be devised was practiced, so as to improve the constitution, and washes of various descriptions had been applied by syringe. But every attempt failed in affording any but the most temporary relief, and her case was looked upon as hopeless. Two eminent physicians in London were consulted, but with the same result, and her mind was prepared for the worst. She was in this condition when I was called in for the first time, and the case certainly appeared to be rapidly approaching its last stage. What rendered it still more lamentable was the depression of mind caused by a sudden transition from a state of comparative affluence to a very slender means of sub-sistence. This, combined with the cares attendant upon a family of small children, told terribly upon her weakened frame.

In order to labour under no misconception as to the real nature of the case, the speculum was applied, and the os uteri ascertained to be enlarged, malshaped, and of a dark livid colour. When the speculum was introduced, the parts were well washed by means of a powerful syringe, and a strong light brought to bear on the uterine orifice. Pus was distinctly seen issuing in considerable quantities from the os uteri, and occasionally streaked with blood. The os and cervix uteri were very tender and painful when touched, and much increased in size. It must be borne in mind that this case had already existed, in a greater or less degree, for more than two years. For my part, I imagined that nothing but palliative treatment could relieve the patient, and I accordingly ordered injections, containing nitrate of silver, sulphate of zinc, creasote, &c. &c. This treatment temporarily improved the nature of the discharge, but the pains could only be controlled by draughts of muriate of morphia, which, at the commencement, were given in doses of half a grain, and which were ultimately increased to four and five grains each, and even this was often found insufficient to alleviate her sufferings. The uterus was now increased to a considerable size, being soft and spongy to the

touch, excepting here and there, where a portion was felt harder and more unyielding, and presenting an uneven surface. This enlargement gradually increased, and with it increased the severity of the pains, their occurrence being more frequent, and their paroxysms more violent. Sometimes a jerking motion was experienced, and whenever this occurred, the pains came on with redoubled violence. The patient imagined that these jerkings resembled the motions of a child. The length of time, however, which the disease had existed, the extent and character of the discharge, its issuing direct from the uterine orifice, combined with the irritable state and unnatural form of the os and cervix uteri, the extreme tenderness on pressure extending over the whole uterus, its spongy feel, the patient's sallow countenance and emaciated system, and the excruciating pains endured, made such a supposition improbable, though the motions complained of, when tested by the hand, strongly resembled those of a fœtus. At this period I consulted my friend Dr. Radford, whose experience in female diseases is so well known. After a very long and careful investigation with the speculum, it was at length decided that extensive uterine disease undoubtedly existed, and from the amount of pus seen passing through the os uteri, it was pronounced to be ulceration of the internal lining membrane. The discharge was proved to be most certainly pus; and at a previous examination with the speculum, I passed a very thick wax bougie through the os uteri, and advanced it fully *four inches into the uterine cavity*. This attempt was followed by a large discharge of pus. But with all these untoward circumstances, on examining the enlarged uterus externally, and considering the jerking motions alluded to, Dr. Radford concluded, and I fully agreed with him, that a child was in utero. The stethoscope also detected the fœtal circulation. The same palliative treatment was continued, and a strict watch kept on the case. As it progressed, the uterus enlarged, and the sufferings of the patient were piteous to behold. On the 21st of March, 1847, I was called hastily to her, and delivered her of a small emaciated child, apparently one of about seven months. It was, indeed, most painful to witness her sufferings during the dilatation of the os uteri, and the progress of the labour generally. The patient recovered from the effects of her labour very slowly.

The sequel of this case is equally interesting. The uterus is now, March 1848, considerably enlarged (about four times the size of a natural unimpregnated uterus), and the discharge of pus still continues, occasionally streaked with blood. But the uterine pains are no longer severe, and she has within the last three or four months relinquished the morphine. It would appear that suckling the infant, which is still alive, keeps in check the virulence of the disease; for if ever the breast has been more than usually neglected, the uterine pains soon assume an increased severity.

Some curious reflections arise from the consideration of this case. With an extensive existing disease of the very substance of the uterus itself (up to this period) nearly three years' duration, with such excessive discharges, the question may well be asked, how could conception be accomplished? Even admitting this difficulty overcome, a greater still follows, the almost complete impossibility of its advancing, as in this case, to the seventh month. Then, in addition to all, the peculiar and interesting fact of the non-closure of the os uteri during gestation; which is proved, first, by the excessive discharge, seen by the eye with the assistance of the speculum, to pass through it; and, secondly, by a large wax bougie being passed through the os uteri, at least four inches into the uterine cavity. The features of this case are so extraordinary that it would be difficult to credit them, were it not for the evidence of different medical men, and those of considerable experience. No less than five physicians and surgeons were unanimous in their opinions regarding the nature of the disease; and Dr. Radford and myself were witnesses to the latter features of the case, viz. pregnancy and delivery.

ART. 87.—*Reduction of an Inversion of the Womb, dating from sixteen months and a-half.* By M. VALENTIN.

(*Revue Médico-Chirurg.* Nov. 1847.)

[The reduction of the inverted uterus, excepting it is accomplished speedily after the occurrence of the accident, is so rare an event that the following case will be read with interest:—]



On the 8th of April, 1846, a female, æt. 20, of good constitution, was delivered of her first child. The midwife removed the after-birth by pulling violently at the cord, which proceeding gave rise to intense agony. Immediately on its extraction profuse hemorrhage took place, followed by prolonged syncope. The three following days the patient complained of severe abdominal pains, and there was more or less sanguineous loss during an entire month, after which the discharges were replaced by a persistent leucorrhœa. The patient soon observed that a tumour projected from the labia, which was readily ascertained to be the inverted uterus. After the lapse of six months, this tumour had so diminished in size that it re-entered the vagina.

At the end of a twelvemonth the patient was in the following condition: discoloration of the skin and lips, general laxity of the muscular system, slight puffiness of the face; nervous headache, frequent small pulse, and extreme general debility. The sanguineous discharges from the vagina were pale. In the centre of the upper part of the vagina a pyriform tumour could be felt, of the size of a pullet's egg. An annular ring pointed out the encirclement of the os uteri. Seen with the speculum, the mucous membrane appeared red and bleeding. Previous to any treatment, absolute rest was enjoined, with tonics and nutritious diet.

The reduction was accomplished as follows: after several months devoted to the recruiting the strength, on the 15th of August, 1847, the vagina was dilated by sponge tents, and the female was placed on the edge of the bed, as for the application of the forceps. The left hand of the operator then grasped the hypogastrium, the uterus itself was seized by the fingers and thumb of the right hand, and pressure made; but the screams of the patient caused the operation to be for the present abandoned.

On the 26th another attempt was made, with the aid of ether inhalation. The patient being rendered insensible, the same manipulations were gone through; but, as before, the uterus was altered in form, without the fundus yielding as was wished. The attempt was persisted in for ten minutes without progress, when etherization was carried to the extent of inducing relaxation of the sphincters. At this moment the collapse of the system was complete, and the uterus partaking of the relaxation, the fundus allowed itself to be depressed under the finger, until at length it became suddenly restored to its normal state. In order to assure himself that the reduction was complete, the operator introduced his finger into the uterine cavity.

The patient had felt no pain during the operation, but complained of soreness over the pubes when she recovered her sensibility. (Laudanum cataplasms to the abdomen; low diet.)

27th. The pain extending to the sacrum; pulse frequent. (Vs. ad 3x; hip-baths.)

28th. Pulse less frequent; pain less. (Leeches; hip-baths.)

From this time the patient went on favourably; and on the 20th of October went into the country.

#### ART. 88.—*Case of unavoidable Hemorrhage—Successful Operation of Transfusion.*

By Dr. WALLER.

(*Medical Times*, Jan. 1848.)

The following interesting case occurred in the practice of Mr. Greaves. Hemorrhage appeared to an alarming extent in the eighth month. The patient appearing in a desperate state, Dr. Waller's assistance was requested. He found her in a very unpromising state, with a completely blanched countenance, pale and livid lips, cold extremities, laborious respiration, and a pulse scarcely perceptible; the general surface of the body was also cold. In short, everything indicated approaching dissolution. Stimulants had been freely given, but they failed to excite even a temporary rally. The vagina was filled with coagula; and, as the hemorrhage appeared to have ceased, he did not think it advisable to disturb the clots in attempting delivery. Stimulants were again had recourse to, but with no better effect. The symptoms of exhaustion increased, and nothing but transfusion seemed, under these circumstances, to hold out the slightest chance of relief. Mr. Greaves concurring in this opinion, preparation was made for its per-

formance. The first intention was to have laid bare the vein, and to have had all things in readiness, then to have delivered, and, provided there had been no improvement in the condition of the patient, to have transfused immediately afterwards. A little reflection convinced the operators that this plan would be fraught with danger; for, had syncope occurred, in all probability it would have been fatal. The operation was, therefore, at once commenced. When about five ounces of blood had been introduced, the amendment was evident: the pulse was more perceptible, and the countenance assumed a somewhat better aspect. The blood now flowed very sluggishly from the arm of the female who supplied it: it was, therefore, determined to wait awhile and watch the effects, nourishment and stimuli being administered occasionally. The rally continued for about two hours and a half, when the female again began to sink, and jactitation supervened; gruel, with brandy, was given without any benefit: the pulse was again but just perceptible, and the body getting cold. Dr. Waller again injected about four ounces of blood from the same individual who had previously supplied it; but this time the symptoms did not improve. The stream issuing from the punctured arm was so languid that it was not thought right to proceed, and a fresh subject was sought to furnish them with a better supply. The husband of the patient, being in the room, came forward to their aid: he looked rather pale, and, therefore, they gave him a glass of hot spirits and water, and then opened a vein, from which the blood flowed in an impetuous stream. The first injection of about two ounces produced a marked alteration in the pulse; it became decidedly perceptible. When nine ounces had been injected, the countenance was much improved; there was even a slight appearance of colour in the cheeks, and pain in the arm was complained of. Four ounces more were introduced, when all symptoms of immediate danger vanished. There was no faintness afterwards; the surface was warm; the pulse steady, about 100 in the minute; jactitation ceased; and nourishment was retained on the stomach. The only complaint was of excessive fatigue, with an inclination for sleep; there were also a few "grinding pains." Dr. Waller visited her again in about an hour and a half. She had been dozing, and was extremely tranquil; reaction was perfect, and there was no hemorrhage, no tumult in the circulation. He now left the case in the hands of Mr. Greaves, who afterwards informed him that, after a sleep of some hours, the pains increased, and he felt a portion of detached placenta in the vagina: this was expelled by the natural efforts. A dead child soon followed, the remainder of the placenta coming away an hour afterwards, without hemorrhage. The mother recovered.

[The failure of the second injection from the original person to rouse the patient when the "stream issuing from the punctured arm was languid," and the instantaneous success derived from the freely flowing blood from the husband's arm, are suggestive of valuable propositions, which should not be lost sight of in practice.]

ART. 89.—*Case of Complete Antero-version of the Uterus during Labour.* By Dr. MULLER, Homberg.—The author having been called to a woman in the country, said to have been three days in labour, found the parts of the child unusually distinct on examination *ab externo*, while the most careful examination could discover no os uteri. The woman was small, and of a lax habit of body, and the child seemed only to be covered by the abdominal parietes. Our author diagnosed an abdominal pregnancy, which was confirmed by two older and more experienced men called in for consultation. The question of the Cæsarean section was already agitated, and anxiety as to what was to be done with the placenta already felt; when one of the advisers recommended that, before proceeding further, the os uteri must be found. After great exertion, it was discovered, on the fifth day of labour, lying above the promontory of the sacrum, and sufficiently dilated to allow the membranes to protrude, and the child to be distinctly felt. The difficulty was now solved. The woman was placed on her hands and knees, the uterus then raised by a towel, the membranes ruptured, and the child extricated by the feet. Both mother and child did well; and the latter is now grown a woman.

*Casper's Wochenschrift*, Feb. 1847.

ART. 90.—*Case of Abdominal Pregnancy, with Suppuration and Extraction of the Fetus through the Abdominal Walls.* By Dr. DUCKERT.

(*Casper's Wochenschrift*, and *Monthly Journal*, Nov. 1847.)

A female while pregnant was tossed by an ox, and fell violently to the ground. Three hours after, she was found with a pale countenance, cold skin, and other symptoms of collapse. The abdomen was tender, and the fœtus could be distinctly felt through the abdominal walls on the right side. On external examination, the os uteri was found closed, and the vagina was pushed to the right side. The patient, during her pregnancy, had frequently suffered from pain in the abdomen. Under these circumstances, it was at first supposed that hemorrhage had occurred in the peritoneal cavity, but the symptoms increasing, an abdominal pregnancy was ascertained to exist. The hemorrhage from the vagina became more and more watery, and continued three weeks. An abscess was subsequently discovered below the umbilicus, and an incision being made into it, a fœtus was seen presenting and removed, together with a putrid placenta. No very great hemorrhage ensued, and the wound was brought together by sutures. The discharge at first was considerable, and very fetid, but was soon succeeded by that of good pus. The fever was of a low type, but gradually disappeared under the use of stimulants and tonics. By the end of the year, the wound was completely closed.

ART. 91.—*Case of Interstitial Pregnancy.* By M. PAYAN.

(*Gazette Médicale*, No. 48, 1847.)

An unmarried female, æt. 32, had arrived at the third month of her second pregnancy, when she was suddenly seized with abdominal pain and thirst.—Leeches were applied, but prostration and collapse gradually ensued, and she died in the course of a few hours. The suspicion having been excited that abortion had been intentionally induced, the body was inspected by order of the authorities.

A large quantity of blood, partially coagulated, was found in the peritoneal cavity, and covered the womb. At the upper part of this organ, a semi-transparent pouch presented, which contained a foetus. The vagina was healthy. The os tincæ admitted a finger.

The womb was found to be of the size usual at the third month. When cut through longitudinally, its cavity was seen to be of proportionate dimensions, but void, and lined with decidua. Above the uterine cavity was found another, which occupied the left side of the fundus, near the Fallopian tube; but it could not be ascertained that the tube opened into it. It did not, however, communicate with the proper uterine cavity. This second cavity was formed in the thickness of the fundus uteri, the tissues of which were stretched to that degree, that they became almost diaphanous. The cavity contained a fœtus of three months.

Although the hemorrhage into the abdominal cavity was readily explicable on the supposition of a spontaneous rupture of the foetal cyst, two of the medical witnesses advanced another opinion. They maintained that an instrument had been passed into the womb, which had perforated the fundus, and thus, through this perforation, the ovum had been forced by the contractions of the uterus. The ovum was, in their opinion, mistaken by M. Payan for a foetal cyst.

M. Payan supported his view of the case, that it was an instance of interstitial pregnancy, and opposed the idea of perforation upon the following grounds:—1st, that if the ovum had ever been in the uterine cavity, it must have been injured by any instrument which had pierced the fundus uteri; such, however, was not the case; 2d, because, if the ovum had been expelled from the uteri into the abdominal cavity, the placenta would necessarily have been detached, in which case, hemorrhage per vaginam would have ensued.



ART. 92.—*Spontaneous Rupture of the Uterus before Labour.* By THOMAS F. BROWN-BILL, Esq., Surgeon to the Salford Workhouse.

(*Prov. Med. and Surg. Journal*, Dec. 29, 1847.)

M. A. Glover, æt. 28, was of rather short stature, well proportioned, and had a healthy appearance. She had been married about eight years. In ten months after marriage, after an ordinary labour of about nine hours' duration, she gave birth to a full-grown female child, which lived about four months. Soon after labour, which I understand was quite natural, she was seized with convulsions, followed by delirium, &c., which, continuing for a week or ten days, subsequently resulted in an attack of puerperal mania for which she was afterwards admitted into the Manchester Workhouse. Here she remained about two months, and as no improvement had taken place, was then sent to Lancaster Asylum, whence, having been confined seven or eight months, she was discharged cured, and from that until the present time has enjoyed uninterrupted good health, having been separated from her husband during most of the time since her last confinement. She again became pregnant, and was admitted into the Salford Workhouse on the 4th of November last, in order to lie in.

She stated that in the beginning of the seventh month of gestation, whilst hanging out some clothes, she received a fall, which shook her violently, but did not cause her, either then or afterwards, any particular pain. On the 20th of November, at 6 A. M., after having passed a restless night, with occasional slight uterine pains, she began to vomit. This was followed by several pretty strong pains, during one of which she experienced (to use her own expression) a severe crack in the back, with a feeling of something suddenly giving way in her inside, which was immediately followed by a discharge of liquor amnii from the vagina. The midwife, who was an intelligent and experienced person, was accordingly sent for, and was soon in attendance. She found, upon examination, the os uteri nearly closed, hard, and incapable of admitting the point of the finger: there was a slight discharge of a brown colour from the vagina; the patient had vomited the contents of the stomach, and the pains had altogether subsided. Under these circumstances she left her, and found, on her return at 3 P. M., that she had had no pain during her absence; the os uteri was lower down, and more yielding, though not in the least dilated, and a slight discharge of water, tinged with blood, escaped whilst making the examination. She had not slept nor felt the motion of the child since. Soon after, the waters broke. A dose of castor oil was now ordered.

On visiting her the following evening, at the request of Mr. Roberts, the governor of the workhouse, I found the oil had been rejected by the stomach, and the vomiting had continued more or less to the present time, the matter at first being of a greenish-yellow, and afterwards of a chocolate colour; labour had not in the least progressed, the os uteri remaining as before, if anything, more contracted; had no pains; complained of being weak and poorly, and, although several opiates had at short intervals been administered, she had as yet not slept, and, with a feeble pulse, her countenance now began to assume an anxious expression.

Nov. 22d. About 11 A. M., she began to doze for short periods, but this state soon gave way to extreme restlessness, almost incessantly requiring her position to be altered. She now complained of severe pain in the middle of her back, and her pulse was evidently sinking. Between one and two o'clock her breathing became laborious, her finger-nails turned livid, a continued gasping followed, and in this state she died.

The body was inspected twenty-four hours after death, in the presence of several medical friends, and Mr. Roberts, the governor. The abdomen was found to contain a large quantity (about two pints) of dark-coloured uncoagulated blood, probably diluted with a portion of the liquor amnii, and this being partially removed, the first object that presented itself, entirely excluded from the womb, and partially covered by the omentum and small intestines, was a full-grown male child, that had evidently been dead several days, the first stage of putrefaction having commenced. On partially removing the child, which lay with its left shoulder to the womb, a large rupture of this organ was observed, extending from the centre of the fundus posteriorly along its whole length as far

as the os uteri, leaving only a narrow rim surrounding it, and through which the child had escaped into the cavity of the abdomen. The length of the opening was about seven inches, and the uterus, which seemed perfectly healthy, was well contracted over the firmly-adherent placenta.

ART. 93.—*Cancer of the Uterus simulated by the Irritation of a Piece of Sponge.*—Dr. Mitchell relates the following instructive case. Mrs. P., æt. 26, a delicate anæmic woman, married two years; commenced menstruating at sixteen, and has been regular up to the last year and a half. When four months married, she had an abortion, and amongst other means employed to arrest the flooding, the vagina was plugged. She continued for a long time in a very precarious state, and has never been well since. She now (January 16, 1846) complains of great pain at the lower part of the abdomen, with constant pruritus of the vulva; but what distresses her most is the constant discharge of a dirty sanious fluid from the vagina, varying in quantity at times, but always increased during the menstrual period, the fetor being at all times unbearable. She has consulted several medical men, some of whom have pronounced it cancer. She is much emaciated, and in very low spirits, having tried a variety of remedies without benefit. The speculum has been used, and applications made to the part. On examining with the finger, the mouth of the uterus could not be detected at all, but a soft fleshy mass, occupying its place, and projecting over the cervix and into the vagina, quite insensible to the touch, could be felt. On introducing the speculum, a dark-coloured fimbriated body was brought into view. The end of an uterine sound was applied to it for the purpose of tracing its attachments, during which examination a small piece was detached. This piece was put under water, and found to consist of a minute portion of sponge, with a quantity of what appeared to be lacerated muscular fibre.

The after part of the treatment was very simple. Portion after portion of the mass was detached without much trouble, the whole being in a completely decomposed state, and only held together by the granulations from the uterus, which were very long and tender. The separation was attended with a small loss of blood. The pieces, when put together, weighed five drachms and a half. The vagina was syringed out frequently with warm water, and the surface of which the sponge had been applied touched three times with nitrate of silver, at an interval of four days between each application. At the end of a month the os uteri was quite normal, with the exception of a slight induration and puckering of the lips. The menstrual function has been naturally performed, and she is gaining strength and flesh. This lady continued to improve, proved pregnant in March, 1846, and was safely delivered at the full period.

*Dublin Med. Press, Dec. 8, 1847.*

ART. 94.—*On Phlebitis of the Brain and Meninges in Puerperal Women.*

By Dr. F. M. DUCREST.

(*Archives Générales de Méd.*, Nov. 1847.)

According to the author, this affection in puerperal women is of rare occurrence, only five instances of it having occurred among 259 cases in which the head was examined after death. In one of these instances, the affection was not accompanied by any other cerebral disease; in the others, it occurred in combination with cerebral or meningeal inflammation.

The first case was a woman, æt. 19, presenting the appearance and physical signs of phthisis, who was delivered of a male infant at the eighth month, and afterwards became affected with frequent pulse, and a peculiar tremulous motion of the eyelids, lips and tongue. At first, there was no other symptom; but on the seventh day after delivery, there was an increase of the affection, with delirium, headache, and some convulsive movements of the limbs. On the ninth day the pulse and respiration were accelerated, jaws locked, tongue dry, articulation imperfect, but intelligence apparently unaffected. There was great feebleness of all the limbs, and nearly complete paralysis on the left side. In a few hours the pulse fell to sixty, the respiration became slow and laboured; soon after she died. On dissection, the meninges were perfectly healthy; the cerebral hemispheres also healthy; but on section of the right side of the pons varolii, and the cerebral and

cerebellar peduncles of the same side, the vessels in the interior of these parts were found distended to the size of a large pin by firm, dark clots, which, when extricated, appeared as dark brown cylinders of above a centimetre (nearly half an inch) in length. Around these, the cerebral substance was of natural colour and consistence. The lungs were extensively tuberculated, and contained numerous caverns. On the right side of the uterus was found a quantity of pus, surrounded by a slate-coloured induration of the substance of the organ, two millimetres (one line) in thickness.

The second case was that of a woman, æt. 25, who was delivered naturally, but soon after was seized with pains of the hypogastrium and limbs. These were followed by shiverings, fetid diarrhoea, and colic pains. The milk was suppressed, and leech-bites on the abdomen suppurated. On the ninth day, the pains being mitigated, she had severe cough, with crepitant rale at the posterior and lateral parts of the right lung. From the fourteenth to the seventeenth day, the right buttock swelled, and became the seat of lancinating pain; a large quantity of pus, with fetid gases and sloughs of cellular tissue, were evacuated by incision. In the meantime there had been watchfulness and delirium, with gradually increasing loss of intelligence, and moderate cephalalgia. She died on the twenty-seventh day. The pulse varied between 108 and 140, and the respiration between 28 and 48. On dissection, there was considerable subarachnoid effusion; the veins of the pia mater, on the convexity of the right hemisphere, were filled with firm, friable adherent clots, of a whitish colour, extending in some places into the cortical substance, and being darker in colour there and in the anfractuosités. The cortical substance was somewhat softened, and of a reddish colour; white cerebral substance not altered. The lungs contained some tubercles, and the lower lobe of the right lung was the seat of lobular pneumonia; several of the vessels were filled with partially-softened clots. The venous sinuses and lymphatics of the uterus were filled with pus; the broad ligaments were also infiltrated with pus. The cellular tissue between the sacrum and the left great trochanter was gangrenous, and full of pus.

The third case presented successively hypogastric pain and tenderness, with numbness and painful swelling of all the extremities, beginning with the right arm, in which she had been bled. The cerebral symptoms and progress of the case were very similar to the last case, with the additional symptoms of vomiting before death, which happened on the seventeenth day from delivery. On examination, the veins of the right arm were swelled, and filled with pus; the left lateral sinus of the dura mater contained a light-coloured clot, and the veins of the posterior and inferior parts of the left cerebral hemisphere entering into this sinus were distended with dark blood firmly coagulated. There was extensive softening of the posterior part of the left hemisphere, which contained in its vessels numerous small clots. The vessels of the uterus contained pus, as in the last instance.

The fourth case commenced two days after delivery, with intense headache, convulsions, and transient stupor. On her removal to the hospital, the headache continued, with slow, troubled utterance, tenderness of the abdomen, and fever. She was bled, and the blood presented no buffy coat. An hour afterwards she had a convulsion, in all respects like an epileptic attack, with coma, lasting for a quarter of an hour, and up to the morning of the next day, she had twelve nearly similar convulsions. The abdominal pain continued, and she had a shivering. The fourth day after delivery there were immobility, insensibility, and a contraction of the right limbs, with perpetual agitation of the left, afterwards plaintive cries, coma, stertor, resolution of the right limbs, continued agitation of the left; pulse irregular, 140. Death occurred next morning. On examination, there were clots in the sinuses of the dura mater, and ecchymosis on the surface of the left hemisphere; the vessels of the pia mater in the neighbourhood of this ecchymosis contained reddish clots; the pia mater, both externally and in the ventricles, infiltrated with pus. The lungs contained miliary tubercles. The cavity of the pelvis, and various parts of the peritoneal cavity, contained pus; the uterine tissue was healthy; some clots of blood were in the venous sinuses.

The fifth case occurred in a subject affected with extensive pulmonary disease, who was seized with headache, and most of the symptoms mentioned in the first



three cases, while yet undelivered, though at the full term of pregnancy. The morbid changes were in great part similar to those previously described; but the amount of softening of the cerebral substance was greater than in any of the others, and the number of veins occupied by the firm coagula smaller; so that this case seems more important, in reference to the peculiarities of the disease, than any of the preceding.

## SECT. II.—DISEASES OF CHILDREN.

ART. 95.—*On the Theory of Spasmo-paralysis in Infants and Adults.*

By MARSHALL HALL, M.D., F.R.S., &c.

(*Lancet*, March 18, 1848.)

[The above term is applied by the author to an affection which must be well known to most practitioners, viz. a more or less permanent and apparently spasmodic contraction of one or more limbs, accompanied by a greater or less amount of atrophy and incomplete paralysis of the muscles. He observes:]

Paralysis may depend upon the exclusion of the influence either of the cerebrum or of the spinal marrow—that is, of both cerebrum and spinal marrow. Spasm can only arise from irritation of some part of the spinal system; but this irritation may affect the incident excitor nerves, the spinal centre, or the muscular nerves. Spasmo-paralysis is a term which I have adopted to express the varied combinations of spasm and paralysis which occur so frequently in practice.

Infants are often born with distortion of the foot or feet, and during growth a paralytic weakness and atrophy are conjoined with the spasmodic action of the muscle. A similar effect is sometimes seen to take place in infancy. In some cases of hemiplegia, spasmodic contraction of the hand and arm accompanies the paralytic attack. In other cases, a spasmodic contraction of the hand gradually takes place more remotely from the attack. What is, then, the theory of these cases?

*Intra-uterine spasmo-paralysis.*—How interesting would be a series of accurate cases and post-mortem examinations of the various congenital spasmodic and spasmo-paralytic affections, of cheirismus, and especially of podismus, in the varied deformities of club-foot. Is the cause of the calamity always of centric origin, or is it sometimes the reflex action of external cold, &c.? The class of intra-uterine diseases still requires renewed investigation; no part of it more than the affections of the nervous system.

Effusion over the hemispheres and at the base of the encephalon, and along the spinal canal, is too frequently the cause of irritation—pressure or counter-pressure on the spinal system—the diseases of the nervous system, which is endowed with excito-motor power. This irritation is the source of various congenital convulsive or spasmodic affections; it may be the cause of strabismus, laryngismus, &c., and of various distortions of the hands and feet. In the case of two brothers similarly affected, the tendo-Achilles was permanently contracted, with spasmo-paralysis of both legs. On the death of one, æt. 12, effusion on the cerebral hemispheres at the base of the brain, and along the spinal canal, was found in considerable quantity. The arachnoid was thickened, and over the lateral portion of the hemisphere was converted into a thin layer of bone.

*Of spasmo-paralysis in infants and children.*—Spasmo-paralysis in infants and children is of centric and of ex-centric origin; the prognosis of the former being, of course, far more formidable than that of the latter.

Teething, and gastric and intestinal irritation, and, I suspect, exposure of the naked surface to the cold, are the causes of the reflex or ex-centric forms of this malady. From such causes I have seen hemiplegia of the arm, or of the leg, or of both; and the proof that the affection *was* of reflex origin was a very happy one—viz., speedy recovery.

The event, however, is not always so fortunate.

Sometimes both legs are affected, and this affection is sometimes more observed in one leg than in the other; sometimes the spasm, sometimes the paralysis, pre-

dominates; and sometimes one leg is affected with paralysis, whilst the other is affected with spasmo-paralysis.

*Spasmo-paralysis in the adult.*—But of all the cases which have come under my observation, none have been more replete with interest and anxiety than spasmo-paralysis occurring in the adult period of human life.

It is well known that the epileptic convulsion sometimes leaves one arm, one leg, or one side, paralytic or hemiplegic, in a greater or less degree. If the seizures were not to be repeated, I imagine this paralysis would frequently subside, being the effect of shock, and of the common cause or causes of the convulsion and of the hemiplegia, which is therefore not permanent. But if the shock be repeated, the paralysis may be permanent, although the convulsion subsides.

In one most interesting case, a lady, æt. 35, was seized with violent convulsion of the left side of the face, and of the left arm, the leg being unaffected; when the convulsion ceased, the face and arm were left extremely, if not perfectly, paralytic. A degree of amendment took place; but the convulsions returned, occupying the same seats as before, and, on ceasing, again left the face, arm, and hand absolutely paralytic.

This lady had once had phlegmasia dolens after parturition, and this leg again became swollen. But the cause of the attack of convulsions seemed to be discovered in the condition of the intestines; for these convulsions were relieved by purgative medicines, but were excited if those medicines acted too violently.

From the paralysis left by this serious attack, or repetition of attacks, the patient recovered completely—an additional proof that the affection had, like many cases of epileptic seizure, arisen from some cause ex-centric to the encephalon or spinal marrow. And how invaluable is this fact, in reference both to our prognosis and treatment!

Indeed, I may here observe that spasmo-paralysis is in every respect a disease of less hopeless character than pure paralysis, inasmuch as the irritation of an organ is a less severe affection than its destruction. The diagnosis or detection of the cause is the first great object of the physician, and especially the determination of the question, whether that cause be seated centrically or ex-centrically.

In one case, which occurred in a member of our own profession, after repeated threatenings supposed to be apoplectic, severe spasmo-paralysis supervened, and remained permanent. Bleeding had been resorted to constantly as the preventive. It ought, I believe, to have been decided, but not too severe, antacid aperients, with a strict attention to the diet, which should not have been of a mere vegetable, but of a light and digestible character.

There was, I believe, more of the epileptic than of the apoplectic in those threatenings. Is there any physical lesion? Is the case, or was the case, one admitting of recovery? How deeply interesting are all these questions!

It is plain that the new topic—new because now viewed distinctly—of spasmo-paralysis will assume an important position amongst the objects of the physician's studies.

I have two patients under my care at this time, with podrimus, occurring at the ages, in one, of 25, in the other, of 45. Both are females. In the first, the right foot is drawn upwards and inwards, and so severely, as to induce great tenderness and swelling of the outer ankle. Various symptoms of nervous origin are conjoined with this deformity of the foot. In the other, the tendo Achilles in each leg is tense, and the toe only, and not the foot, much less the heel, can be put to the ground. In this case almost every article of food or medicine is rejected by vomiting.

I do not believe that either of these cases is hysteria. There is no other symptom of hysteric character, and the temperament in both patients is staid and sedate.

*Conclusion.*—From the recent progress of the physiology of the nervous system, we are now enabled to conclude—

1. That *paralysis*, pure paralysis, may be an affection either of the cerebrum, the spinal marrow, or the nerves; but
2. That *spasm* must be an affection of some part of the true spinal system; and
3. That spasmo-paralysis must at least involve in it an affection of the true spinal system, either primarily or secondarily.

There is only one exception to this last rule: it is the case of severe hemiplegia,

in which, from the mere facts of the severing of the influence of volition, and the normal or physiological action of the spinal marrow—the source at once of the irritability of the muscular fibre and of tone—the affected hand frequently becomes spasmodically flexed.

Here I conclude this brief paper. I think I have clearly shown in it, once more, how important, how essential physiology is to the physician, and pointed out a distinction to be carefully drawn between paralysis, and spasm, and spasmodic paralysis, as at once a guide to our prognosis and our treatment.

ART. 96.—*On the Convulsive Affections of Infancy.* By Dr. MARSHALL HALL.

(*Lancet*, July 12, 1847.)

[In a paper recently read before the Medico-Chirurgical Society, the author has made the convulsive diseases of infancy the subject of lengthened and minute description. Our space will not admit of the reproduction of the entire communication, which, indeed, is not necessary; for we do not see that any new fact or elucidation is added to those which the author has some time since published in his valuable work on the “Disorders of the Nervous System.” Of the practical part of the paper the most interesting are the two following extracts:]

*Diagnosis.*—The diagnosis in the convulsive diseases of children is—

1. That of the kind or *origin* of the disease, and especially that between the *centric* and *ex-centric* affection.

2. That of the form of the disease, and especially that of the different partial and general convulsive affections; for it may be so partial as to consist of one symptom only, as strabismus, laryngismus, or it may be general.

In the *centric* affection there are generally pain and cerebral symptoms, as affections of the sleep, temper, and senses—wakefulness, fretfulness, intolerance of light and noise, and a peculiar contraction of the brow from the beginning.

In the *ex-centric* affection there is at the first, no cerebral symptom; all the phenomena are spinal; general convulsion must take place before cerebral symptoms are observed.

The diagnosis between that part of this affection designated laryngismus and laryngitis is founded on two circumstances: 1st, the transitory character of the symptoms in the former, and its permanency in the latter; and, 2d, the complication of the former with strabismus, cheirismus, and other convulsive or spasmodic affections.

The same principles of diagnosis distinguish spasmodic laryngismus from any paralytic influence or compression of the pneumogastric nerve on the larynx; in which case, there may be other effects of paralysis of the pneumogastric nerve, especially accumulated secretion in the bronchial tubes and pulmonary tissue, leading to cough and various “*râles*.” The reality and the unbiassed diagnosis of this form of disease are still to be ascertained.

Laryngismus induced by bronchitis, or any inflammatory affection of the trachea or larynx, acting as an irritant on the incident laryngeal nerves, would be distinguished by the same absence of other spasmodic affection.

*Prevention and treatment.*—I now come to the last and most important topic of my paper, the prevention and treatment of convulsive diseases; to which, indeed, the views which have been given immediately lead, and in the course of which they serve as a torch to enlighten our path.

The first thing to be accomplished by the physician, as in all other cases in practice, is a full and accurate diagnosis of the disease, its form, its simplicity, or complexity; its effects; and especially whether there has or has not occurred general convulsion.

If the case be one of *centric* origin, which is the more rare, the original disease must, of course, be treated energetically. If it be of *ex-centric* origin, or reflex, which is by far the more frequent case, the excitant or excitants, whatever these may be, must be carefully sought out, removed, and avoided.

But, as a rule, in all cases, the influence of all excitants, all excitants of emotion, of reflex action, must be absolutely removed. For even in the *centric* affection it may be undue excitability only which is induced, and the attacks may depend upon external excitants.



The augmented arterial action within the gums and the alveolar processes must be subdued by deep, diffused, and repeated scarification of the gums, conducted with every precaution to avoid excitement of a mental kind.

The stomach should be emptied forthwith. This may frequently be readily done by irritating the fauces with a feather, or the finger; or a dose of ipecacuanha may be given; and then such diet should be administered, according to such rules, as may prevent the presence and delay of undigested matters in the stomach. A new and healthy nurse, or asses' milk, given by means of the bottle, are resources of the utmost moment.

The intestines should be promptly washed out by means of ample enemata of tepid water, and they should then be kept well relieved, gently free indeed, by means of mild but efficient aperient medicine.

I have great reason to suspect the existence of undue *acidity*, not only in the stomach, but in the course of the intestinal tube, in those cases; and I strongly recommend *antacid* aperients, such as a combination of the bicarbonate of potassa and the carbonate of magnesia, in the proportion of one-fourth and three-fourths, in some proper aromatic or aperient vehicle, and repeated so as to produce the double effect of neutralising the gastric acid and moving the bowels.

The next object is to guard the little patient against every injurious impression from the external atmosphere. When the north-east winds prevail, or the air is cold or damp, the patient's bed should be surrounded, at intervals of about one foot, by *three* distinct curtains or tents of gauze, or of net: the air of the room should be protected from partial currents, be well supplied with hygrometric moisture, and be maintained at a temperature of 65° Fahr.

Every mental disturbance must be avoided; the approach of a stranger, the administration of the gum-lancet, and, not less, of medicine or other remedies, must be managed as carefully as possible.

The *sleep* should be *watched*; if it be disturbed by dreaming or starting, the infant should be gently awakened, and any sudden noise or light should be avoided; precautions necessary, indeed, at all times.

As stammering would scarcely exist without emotion, so the convulsive diseases of infants and children, especially those of ex-centric origin, would scarcely exist without emotion and excitants of reflex action; an aphorism of the utmost moment in practice, and admitting of great extension; for in this respect, with the affection under consideration, chorea, the paralysis agitans, tetanus, and even hydrophobia itself, may be ranked in some degree.

If laryngismus should exist and be extreme, the larynx being closed, water must be forcibly sprinkled on the face; the larynx is opened by the new excitant acting on other nerves and muscles, and inspiration is excited.

If apparent asphyxia have taken place, and this measure have been tried in vain, artificial respiration should be attempted; the chest and abdomen should be compressed, and the pressure should be suddenly removed. (I once witnessed asphyxia from this cause in a puppy. I applied my ear so as to examine the beat of the heart; the pressure induced expiration, and inspiration followed on its removal, and the puppy recovered.) Or the lips of the practitioner should be applied to the mouth of the infant, whilst its nostrils are closed, and its trachea pressed against the œsophagus. In a word, every measure should be adopted to which we have recourse in other cases of asphyxia.

If general convulsion be threatened, or have occurred, every precaution and measure should be adopted which can protect the cerebrum from congestion and its effects; the alcoholic lotion applied to the head, leeches, cupping, mercurials, and purgative medicines, fomentations and warmth applied to the feet, &c., must all be employed with promptitude and energy.

The secretions must be attended to; the bile, the urine, especially. If the former be deficient, the use of warm-water enemata should be doubly enforced. If the urine be affected with lithate deposits, the antacid aperients must be doubly enjoined.

The hydrocyanic acid, hyoscyamus, &c., may also prove useful.

ART. 97.—*The Treatment of Acute Hydrocephalus.* By Dr. WEST.

(Medical Gazette, July 16, 1847.)

[In the treatment of this disease, three remedies are chiefly mentioned—depletion, purging, and mercury. Of the former, Dr. West observes:]

With reference to depletion, you must not forget that the disease in which you are about to employ it, although inflammatory in nature, is inflammation in a scrofulous subject, and is in many cases grafted on a previous organic disease: such as those tubercular deposits in the membranes of the brain which I have already described to you. You cannot, therefore, hope to stop short the affection by a large bleeding; but your object must be to take blood enough to relieve the congested brain, and no more than is necessary for that purpose. Avoid precipitancy in what you do, and do not let your apprehensions betray you into that overactivity which is sometimes more fatal to a patient than his disease. If you feel any doubt as to the necessity of depletion, visit your patient again before determining on it, but do not delay that visit long. Order a dose of calomel, to be followed by some sulphate of magnesia, if, as is most probable, the bowels be confined, and return again in three or four hours. You may then find that the bowels have acted, and the sickness has ceased; that the head is cooler, and aches less; and that depletion is, for the present at any rate, unnecessary. Or the child's state may be the same, and you may still feel uncertain as to the right course. In that case, at once obtain the assistance of some other practitioner; this is the season when advice may be really useful, for it is only at the outset of the disease that its cure is possible. When convulsions have occurred, or coma is coming on, your treatment matters comparatively little, for the season of hope and the opportunity for action have then fled.

Though you may have determined on the propriety of depletion, it will be seldom found, even at the outset of the disease, that the character of the pulse is such as to warrant venesection. Local bleeding will generally answer every purpose, and the age and docility of the patient will determine whether it shall be performed by cupping or by the application of leeches. The former is more effective, and, from its shorter duration, often occasions less excitement and annoyance than the latter. In children who are very unmanageable, however, or in very young infants or children, the employment of leeches is always preferable. They should be applied to the vertex, because if put on the temples they hang down over the eyes, and terrify the child; if behind the ears, they are very likely to be rubbed off as it rolls its head from side to side. I will not say that this depletion is never to be repeated, but I believe that in by far the greater number of cases you will do no good whatever by its repetition, and the exceptional cases will generally be those in which very marked relief having followed the first bleeding, the symptoms of congestion of the brain appear to be returning twenty-four or thirty-six hours afterwards. If you do not see the child until the second stage of the disease is far advanced—till general convulsions have occurred, or twitchings of the limbs, or of the muscles of the face, an appearance of extreme alarm, or a state of alternate contraction and dilatation of the pupils show them to be impending, you must be exceedingly careful in abstracting blood. Under such circumstances, I have seen convulsions, to all appearance, induced, and the fatal course of the disease accelerated by a rather free, though by no means immoderate, loss of blood.

The value of purgatives in the treatment of hydrocephalus can scarcely be overrated; but they must be given so as not merely to obtain free action of the bowels, but to maintain it for some days. After having once overcome the constipation, you will secure this end best by giving small doses of purgative every four or six hours. The administration of a strong cathartic every morning will not answer this end nearly so well: for, independently of the chance of its being rejected by the stomach, you will find that the dose which sufficed the first time will not be large enough the second, and that there will be a constantly increasing difficulty in obtaining an evacuation. The nausea and vomiting, which at first stood in the way of your administering any medicine, are often so much relieved by depletion that the stomach will almost immediately afterwards bear a dose of calomel and jalap, or calomel and scammony, which may be repeated every three

hours until they act, while you at the same time endeavour to quicken their operation by the administration of a purgative enema. There is no use, however, in persevering with them if they excite sickness; and it is then better to give a single large dose of calomel in some loaf-sugar, and to follow it by a solution of the sulphate of magnesia, which should be repeated at short intervals. When a free evacuation has been obtained, the same salt, in combination with the nitrate of potash, will often keep up a free action of the bowels, as well as stimulate the kidneys to increased activity. These remedies may either be mixed with the child's drink, or be dissolved in water flavoured with syrup of lemon or of orange-peel.

Hand in hand with purgatives I would have you continue the administration of calomel; but I do not put faith in calomel alone, nor in the production of salivation as a means of curing hydrocephalus. I have seen children die whose mouths had been made sore by mercury, without any influence appearing to have been thereby exerted on the disease: and I recollect two who, at the time of their death, were in a state of most profuse salivation. Whatever good I have seen in these cases from calomel, has been when it was given in combination with purgatives, or when it produced a purgative effect.

Let me, however, again remind you that you may have hydrocephalus combined with tubercular ulceration of the intestines, and that in such a case diarrhœa may exist from the outset, or may come on after a mild dose of some aperient. Now and then, too, without such a cause, constipation is absent, while diarrhœa comes on occasionally in the far advanced disease. You must not, therefore, draw inferences as to the state of the patient too exclusively from the condition of the bowels.

Cold is likewise a very valuable agent in the treatment of hydrocephalus; but its application requires to be judiciously regulated. You will generally find it of service after depletion, for you have extracted blood on account of the febrile disturbance, and heat of the head, and other indications of congestion of the brain: in all of which cold will be a powerful auxiliary in subduing. So long as the signs of active congestion of the brain are present, cold will be of service; but it should not be employed independently of those symptoms which betoken the existence of that condition: nor can you hope to see any benefit result from cold applications to the head in the advanced stages of the disease. I need scarcely say that the application of cold with a shock, or the pouring cold water from a height upon the head, though a very valuable means of rousing a child from the state of coma into which it sinks in some cases from cerebral congestion, is wholly inapplicable in the coma of hydrocephalus. The functions of the brain are here not merely interrupted by the excess of blood in the organ, but they are abolished by the disorganization of its tissue, or the compression of its substance by the effusion of fluid.

In the management of children attacked with hydrocephalus, you must not forget that for the most part they are of feeble constitution, and that they will not bear too vigorous a diet. Just at first, indeed, while the febrile symptoms run high, and the bowels are unrelieved, or the sickness is urgent, the less the patient takes the better. Afterwards, however, it is desirable that he should be supplied with as much light and unstimulating nutriment as he will take; such, for instance, as arrow-root, or veal or beef tea, either of which will often remain on the stomach when most other articles of food or drink would be rejected.

In the treatment of many diseases you see physicians destroy pain by narcotics, and the question naturally suggests itself to you whether you may not sometimes venture, in the management of hydrocephalus, to mitigate, by their means, your patient's sufferings. The inquiry is one not very easy to reply to satisfactorily. I think, however, that there are two conditions under which you would be justified in trying the experiment of giving them. Sometimes the disease sets in with great excitement, and a condition closely resembling mania in the adult, symptoms which may have been ushered in by convulsions. In such a case, although the heat of head and the flush of the face may have disappeared after free depletion, and the copious action of purgative medicine, and though the pulse is feeble as well as frequent, yet the excitement may be scarcely, if at all, diminished. Here an opiate will sometimes give the relief which nothing else would procure.



Your patient will fall asleep, and wake tranquillised in the course of two or three hours. In other cases which did not set in thus violently, restlessness, talkativeness, and a kind of half delirious consciousness of pain in the head become very distressing as the disease advances, being always aggravated at night, so that your patient's condition seems one of constant suffering. But he is not able to bear any more active treatment, and, indeed, you have already emptied your quiver of such weapons. Under these circumstances, I have sometimes given a full dose of morphia, and have continued it every night for several nights together with manifest relief.

Another inquiry that you may put is, when are you to employ blisters? Certainly not at the beginning of the disease, when they would increase the general irritation, and do more harm than good. At a later period they may be of service, when the excitement is about to yield to that stupor which usually precedes the state of complete coma. They should then be applied to the nape of the neck, or to the vertex; and I am disposed to think the latter the better place, since, when applied to the neck, they often become displaced by that boring movement of the head which the child, in many instances, keeps up unconsciously. It is well, too, to remember that the skin, in hydrocephalus, is very inapt to vesicate, so that a blister will require to be kept on for ten or twelve hours—contrary to what ought to be your practice with children. Cases enough are on record, proving the utility of blisters thus applied, to render it your duty not to neglect this means.

Need I say that you must not think of treating a case of hydrocephalus throughout just in the same way as you did at its commencement? There is, if the disease do not run a very rapid course, a stage of weakness and exhaustion, often associated with a half comatose condition, though sometimes attended with a considerable degree of suffering which frequently precedes the sign of approaching death. The bowels are now sometimes relaxed, though oftener they continue constipated, because the nervous energy which kept up the peristaltic movements of the intestines is worn out. The powers of organic, as well as animal, life are palsied. This is the time for the administration of quinine, for the employment of nutritious broths and jellies, and even of wine.

ART. 98.—*On the Symptoms and Treatment of Spasm of the Glottis.*

By CHARLES WEST, M.D.

(*Medical Gazette*, Feb. 11, 1848.)

[The following remarks are extracted from one of Dr. West's valuable Lectures on the Diseases of Infancy and Childhood.]

Spasm of the glottis, which term I select as the simplest among many appellations that the disorder has received, usually comes on by degrees, and it is but seldom that its early *symptoms* are such as to excite the alarm of unprofessional persons. It does not often occur in perfectly healthy children, but an infant who is attacked by it has usually been observed to be drooping for some time previously, to have lost its appetite, to have become fretful by day and restless at night, and to present many of those ill-defined ailments which are popularly ascribed to teething. At length, after these symptoms have continued for a few days or weeks, a slight crowing sound is occasionally heard with the child's respiration. The sound is something between the hoop of whooping-cough and the stridor of true croup; it must be heard to be known, but when once heard is easily recognised. Usually it is just noticed on the child awaking out of sleep, but sometimes it is perceived during a fit of crying, or comes on while the infant is sucking. Now and then the first crow is very loud, and, by its resemblance to the sound of croup, at once alarms the family, but this is not generally the case; and its loudness increases in proportion as its return becomes more frequent. The spasm may have been excited by some temporary cause, and the sound which is its token may in that case not be heard again, but generally it returns after the lapse of a few hours or a day or two. It will soon be found, as its return becomes more frequent, that excitement induces it, or deglutition, or the effort of sucking, so that the child will suddenly drop the nipple, make a crowing sound with its breathing, and then return to the breast again. Throughout the whole course of the affection its attacks will be found to be more frequent by night than

by day; and to occur mostly either soon after the child has lain down to sleep, or towards midnight, when the first sound sleep is drawing to a close.

At first the child seems, during the intervals of the attack, in as good health as before, except, perhaps, that it is rather more peevish and wilful; but it is not long before graver symptoms than the occasional occurrence of an unusual sound with inspiration, excite attention, and give rise to alarm. Fits of difficult breathing occasionally come on, in which the child throws its head back, while its face and lips become livid, or an ashy paleness surrounds the mouth, slight convulsive movements pass over the muscles of the face, the chest is motionless, and suffocation seems impending. But in a few seconds the spasm yields, expiration is effected, and a long, loud, crowing inspiration succeeds, or the child begins to cry. Breathing now goes on naturally, the crowing is not repeated, or the crying ceases; a look of apprehension dwells for a moment on the infant's features, but then passes away; it turns again to its playthings, or begins sucking again, as if nothing were the matter. A few hours, or even a few days, may pass before this alarming occurrence is again observed, but it does come, and another symptom of the disturbance of the nervous system is soon superadded, if it have not, as is sometimes the case, existed from the beginning. This consists in a peculiar contraction of the hands and feet; a state which is likewise not unfrequently observed during infancy, without any spasmodic affection of the respiratory organs. It differs much in degree; sometimes the thumb is drawn into the palm by the action of its adductor muscles, while the fingers are unaffected; at other times the fingers are closed more or less firmly, and the thumb is shut into the palm; or, coupled with this, the hand itself is forcibly flexed on the wrist. In the slightest degree of affection of the part, the great toe is drawn a little away from the other toes; in severe degrees of the affection, this adduction of the great toe is very considerable, and the whole foot is forcibly bent upon the ankle, and its sole directed a little inwards. Affection of the hand generally precedes the affection of the foot, and may even exist without it, but I have never seen spasmodic contraction of the feet when the hands were unaffected. At first this state is temporary, but it does not come on and cease simultaneously with the attacks of crowing inspiration, though generally much aggravated during its paroxysms. Sometimes a child in whom the crowing inspiration has been heard, will awake in the morning with the hands and feet firmly flexed, although he may not have had any attack of difficult breathing during the night. At other times, though but seldom, this state will subside during sleep, while very often it is impossible to assign any reason for its cessation or return. The hands may be often unflexed by bending the fingers; but they resume their former position on the withdrawal of the force, and such attempts are painful to the child. Coupled with these carpo-pedal contractions, the back of the hands is sometimes swollen and livid, and occasionally there is slight puffiness about the face: in one case there was general anasæra.

The general condition of the child varies much during the existence of these symptoms, but it is always widely removed from health. The bowels are almost invariably disordered, constipation being more frequent than diarrhœa. Death sometimes takes place during one of the paroxysms, either by suffocation, or from the often-repeated difficulty of breathing, inducing a state of permanent congestion of the brain; general convulsion occurs, and the child dies comatose from serous effusion. Should the child escape these dangers, and no tubercular disease of the lungs or bronchial glands exist, recovery is almost sure to take place eventually.

[The causes which produce the nervous disturbance upon which the above symptoms depend, are laid down upon the system devised by Dr. Marshall Hall. The irritation, therefore, is stated to originate—1st, in the *trifacial*, in teething; 2d, the *pneumogastric*, from improper feeding; 3d, the *spinal nerves*, in intestinal disorder. These act through the medium of the *spinal marrow*, and the *inferior* or *recurrent laryngeal nerve*, and the *intercostals*. Respecting the great prevalence of irritation from dentition, Dr. West observes:]

The great share which dental irritation has in its production is shown by the age at which it generally occurs. Of 27 cases, 21 occurred in children between the ages of six months and two years. . . . The various sources of irritation are not, however, limited to the period of dentition; hence the disease may be met

with before the commencement of the process, as well as after its completion. I have seen it in a child ten weeks old, as a consequence of improper feeding; in another, aged nineteen months, it followed the sudden suppression of long-continued diarrhœa; in a third, two years and a half old, it appeared to depend on cerebral congestion, the consequence of habitual constipation.

But, besides those cases in which spasm of the glottis is induced by irritation set up in some distant part, there are others in which the exciting cause is situated near the larynx. Dr. Hugh Ley observed several instances of the kind, in which the attack appeared to be due to the presence of enlarged and tuberculous cervical and bronchial glands.

The treatment of spasm of the glottis must be regulated by the nature of the exciting cause; and this, as has already been stated, varies much in different cases. In infants before dentition, it is usually induced by over-feeding, or by food of an improper kind. Our inquiries must, therefore, be at once directed to ascertain how the infant is fed, and supposing it to be still at the breast, other food must be interdicted. Spasm of the glottis, however, occurs much oftener in infants who are brought up by hand, or in those who have been weaned, than in children at the breast. In such cases, much pains are sometimes necessary, in order to ascertain precisely the kind of food that best suits the infant. Two parts of milk and one of barley water, sweetened with a little loaf-sugar, or equal parts of milk and a solution of isinglass, made of the thickness of barley-water, generally agree very well; but much caution must be used in the introduction of farinaceous articles into the child's diet. Asses' milk, which forms the nearest approach to its natural food, must sometimes be given till the child has decidedly improved; while, if it be puny, and do not appear to thrive, and the crowing inspiration continue undiminished, it may become absolutely necessary to restore it to the breast.

The state of the bowels requires no less attention than the regulation of the diet. The tendency to constipation must be combated, not by drastic purgatives, but by mild aperients. Castor oil often answers the purpose very well, but sometimes each dose of it nauseates a child for several hours, and then it is not desirable to employ it, if a daily aperient should be needed. Both senna and manna are apt to gripe, and if they be found on trial to have this effect, their use must not be persevered in. Few medicines act more mildly or more certainly in children than aloes; and the bitter of the compound decoction may be much concealed by extract of liquorice. The bulk of a medicine, however, often opposes a great difficulty to its employment in infancy, and, if that be the case, the powder may be substituted for the decoction. If slightly moistened, mixed with a little coarse sugar, and placed on the tongue, it will often be swallowed very readily. The habitual use of mercurials to overcome the constipation is not desirable; their employment is better limited to those cases in which the bowels are not only sluggish, but the evacuations unnatural in character.

The action of the bowels may be encouraged by rubbing the abdomen twice a day with a liniment composed of equal parts of soap liniment and tincture of aloes; or the bowels may sometimes be induced to act regularly in young infants by the daily employment of a small soap suppository. Enemata may also be employed for the same purpose, consisting either of warm water or gruel.

Sedulous attention to the diet and to the state of the bowels will sometimes effect a cure, but in many instances tonics may be employed with advantage, and probably none with such decided benefit as the preparations of iron. Removal to the pure air, however, or to the sea-coast, is often a tonic of greater power in these cases than all the contents of the laboratory, and one which you will find in some instances to be absolutely indispensable to the child's cure.

All these cares are not less needed in children in whom the process of dentition has already commenced. In them, however, the irritation of teething is often the exciting cause of the affection, and lancing the gums is frequently needed, in addition to the other treatment. The relief thus afforded is sometimes very striking, and the frequent repetition of the process may be necessary to diminish the swelling and tension, and to ease the pain of the congested gum. It is not, however, a proceeding to be adopted irrespective of all other considerations, simply because the child had begun to cut its teeth when the attack of spasm of the glottis came on. Dentition does not go on continuously from the time when the first tooth is



cut until the completion of the whole set; but there are regular pauses in the process, during which its advance is suspended for several weeks together. Thus, for instance, after the appearance of the incisions, there is a pause of several weeks or months before the first molar teeth appear, and then there is another cessation in the process before the child begins to cut its canine teeth. The spasm of the glottis, therefore, may come on during these pauses, and may be excited by some cause quite unconnected with dentition. Lancing the gums, too, is not well borne in every case, even when it may have appeared to be indicated, and I have more than once been compelled to discontinue it, on account of the pain and alarm which it excited bringing on a violent spasmodic seizure whenever I attempted to practice it.

In some instances the spasm of the glottis is associated with manifest uneasiness in the head. It has been suggested that in some of these cases the brain is kept in a constant state of irritation, owing to the deficiently ossified skull being too thin to defend it from injury, while, at the same time, it affords no adequate counter-pressure to check the over-distension of the cerebral vessels. I have seen one case that seemed to lend decided support to this opinion; and many others have come under my notice, in which the recommendation that a horsehair cushion should be made for the head to rest on, having a hole in its centre, so as to relieve the occiput from all pressure, has been acted on with manifest advantage. The supervention of attacks of spasm of the glottis, in a case of well-marked chronic hydrocephalus, would call for little change in the treatment, though it must evidently add much to the danger of the patient.

Symptoms of cerebral congestion are sometimes associated with this condition. They are seldom such as to call for active interference, but the tepid bath and neutral salines, with small doses of hyoseyanus, are often of much service in quieting the general excitement of the circulation, while the occasional application of a leech to the head may be beneficial, especially if general convulsions are beginning to supervene on the attacks of dyspnœa.

It is possible you may meet with a case in which active depletion is indicated, and under such circumstances you must not allow the consciousness that, as a general rule, it is inappropriate to prevent you from having recourse to it in such exceptional cases.

In the paroxysm itself but little can be done. Cold water may be dashed on the face, and the fauces may be irritated, or the finger passed down into the pharynx, so as to bring on, if possible, the effort to vomit, while at the same time the legs and lower part of the body may be placed in a hot bath.

#### ART. 99.—*Symptoms of Infantile Phthisis.* By Dr. WEST.

(*Medical Gazette*, March 24, 1847.)

The symptoms of phthisis in early life resemble, in many respects, those which characterise the disease in adult age, while the points of difference become less distinct as the child grows older, and cease altogether at puberty. During childhood, hæmoptysis is seldom witnessed at any stage of the affection; expectoration is rare, and the cough and colliquative sweats are comparatively slight. In many instances the child droops, loses its appetite, flesh, and strength, and complains of vague pains in the chest for many weeks before the cough excites any apprehension as to the seat of the disease. When the cough does come on, it is slight, short, and dry. The usual amusements fail to occupy the child, who sits about listless and fretful in the daytime, while the skin often grows dry and hot, and the lips become parched as night approaches; but there is so little definite in these symptoms, that they are not unfrequently supposed to indicate the existence of remittent fever, or to be due to the presence of intestinal worms.

It is of importance to bear in mind, that strumous dyspepsia is more frequent in childhood than in adult age, and that its symptoms may be all that marks the advance of phthisis until within a month or two of the patient's death. A definite commencement can almost always be assigned to an attack of remittent fever; and the great heat of skin, the rapid pulse, intense thirst, and delirium at night, are symptoms which will prevent our mistaking for it those slighter ailments which are experienced during the first stage of phthisis. The referring the

symptoms of incipient consumption to the presence of worms, is a mistake even less excusable.

Fluctuations take place in the child's condition, and a casual attack of bronchitis often seems to be the exciting cause of the aggravation of the pulmonary symptoms. The respiration now becomes habitually quicker than natural, and is often attended with wheezing; the cough grows more frequent, and lasts longer; but is still, in most instances, unattended with expectoration, owing to the circumstance that the child swallows those matters which an adult would spit up. The loss of flesh and decay of strength advance even more rapidly than the signs of pulmonary disease. Towards the close, the mouth becomes aphthous, especially in infants; but the alternation of diarrhœa and hectic sweats seldom or never takes place in the child.

In *bronchial phthisis* the symptoms deviate still more from those usually observed in the adult. Bronchial phthisis occurs in its best marked form between the ages of two and six years. Its symptoms, in many instances, first become distinct after some severe bronchitic affection, which either accompanied measles, or came on without apparent cause. By degrees the cough thus established becomes severer, returning in paroxysms not unlike whooping-cough. The respiration grows oppressed and wheezing; the face puffed and swollen; the veins of the neck appear distended, just as in patients with heart disease, and the superficial veins of the thorax become enlarged, as those of the abdomen do in ascites and mesenteric disease.

The fatal termination of bronchial phthisis usually takes place in consequence of the lungs being seriously involved in the tubercular disease, though life is sometimes suddenly cut off by hemorrhage.

[The author completes his account of the symptomatology of infantile phthisis by a lucid description of the difference in other auscultatory phenomena. We regret that we have only space for his recapitulation of the general characteristics, including those afforded by auscultation. The chief of these are:]

1. The frequent latency of the disease in its early stages.
2. The almost invariable absence of hæmoptysis.
3. The partial or complete absence of expectoration.
4. The rarity of profuse sweats.
5. The frequency of death from intercurrent bronchitis or pneumonia.

The most important peculiarities in the auscultatory phenomena are—

1. The smaller value of coarse respiration, prolonged expiration, and interrupted breathing.
2. The apparent or real exaggeration of both early and advanced disease of the lungs in some cases of bronchial phthisis.
3. The loss of the information to be derived from the phenomena of the voice.
4. The difficulty of detecting minute variations in the sonority of the chest.
5. The existence of dullness in the interscapular regions, together with moderate resonance in the upper parts of the chest, and tolerably good respiration there, which are characteristic of enlarged bronchial glands.

#### ART. 100.—*Symptoms and Treatment of Infantile Pleurisy.*

By Dr. WEST.

(*Medical Gazette*, Dec. 24, 1847.)

The main symptoms attending this disease, as well as the *physical signs* of its existence, are the same at all ages. There are, however, some circumstances peculiar to early life, which, unless you are on your guard, may serve to obscure the real nature of the affection. The history of a case of acute pleurisy in childhood, is generally something to this effect:—A child, previously in perfect health, is suddenly attacked with pain referred to the chest or upper part of the abdomen, so severe as to occasion it to cry aloud, perhaps attended, at first, with vomiting of a greenish fluid, accompanied with fever, a rapid pulse, and hurried respiration, interrupted by frequent short cough, which evidently occasions pain, and which the child labours in vain to suppress. After a few hours, the severity of the pain subsides; but the fever, hurried respiration and cough continue, and the child, though usually it looks heavy, and seems drowsy, yet becomes extremely restless

at intervals, and cries and struggles as if in pain, and violently resists any attempt to alter its position, since every movement brings on an exacerbation of its sufferings. The posture which it selects varies much; sometimes its breath seems disturbed in any other than an upright position; at other times it lies on its back, or on one side; but, whatever may be the posture, any alteration of it appears to cause much distress, and is sure to be resisted by the patient.

The probabilities are, that if you auscultate the chest of a child in whom these symptoms exist, you will have good breathing through the whole of one lung.—On the other side, the air will be found, most likely, to enter less freely, though unaccompanied with any moist sound, perhaps unattended with any morbid sound at all; or there may be on this side, a rough sound audible like a rhonchus, and for this you may very likely at first take it, though with more attention it will be discovered to be a friction-sound. A day or two later, you will probably detect a sound like that of bronchial breathing, as you pass your ear from above downwards along the posterior part of the chest, while the friction-sound will have disappeared; and still lower there will be an utter absence of all sound. The walls of this side of the chest, if their tenderness does not prevent you trying percussion, will yield a much less resonant sound than usual; while, at the same time, a distinct sense of solidity will be communicated to the finger.

I need hardly pursue the detail of other symptoms which are the necessary result of pleurisy, whatever the age of the person in whom it occurs. The diminished mobility of the affected side, the displacement of the heart, the bulging of the intercostal spaces, and the enlargement of the chest on the diseased side, are phenomena that take place under the influence of the same causes at every age, though their occurrence is less frequent in childhood than in adult age, since the effusion of fluid is more scanty.

The symptoms by which an attack of pleurisy is ushered in, point sometimes rather to the head than to the chest. The child is seized with vomiting, attended with fever and intense headache; it either cries aloud, or is delirious at night, or screams much in its sleep, and, when morning comes, complains much of its head, but denies having any pain whatever in its chest, while the short cough and the hurried breathing may be thought to be merely the result of the cerebral disturbance. The diagnosis of cases of this kind is sometimes very difficult, since auscultation does not always afford the information you might expect.—It often happens that no friction-sound is perceptible, and that you have no other indication to guide you aright besides the feebleness of the respiratory murmur on the affected side. The child, too, fearful to take a deep inspiration, fills neither lung completely, so that, to a great degree, you lose the information gained by the comparison of the breathing in one lung with that of the other. Still, the history of the case will do much towards preserving you from error. The onset of the illness has been far too acute, attended with far too much febrile disturbance, for a case of tubercular hydrocephalus, while many of the signs of cerebral mischief which might be expected in a case of simple encephalitis have not presented themselves. The heat of head is not greater than that of the rest of the surface; the cries with which the disease set in have not ended in coma. It happens but seldom that convulsions mark the commencement of the disease; but, if they had occurred at the onset, they have not since returned; neither twitching of the muscles, nor strabismus, nor retraction of the head is present; and, though the child may cry, as children when ill and fretful often do, at the curtain being undrawn, and the candle brought near it, yet there is no real intolerance of light. The dyspnoea, also, is too permanent, and the short, hacking cough too frequent, for either to be sympathetic of cerebral disorder.

The pain with which pleurisy sets in, is sometimes referred, not to the chest, but to the abdomen, and its commencement may be attended with vomiting and purging. Pressure on the abdomen, too, often causes a considerable increase of suffering, and you may thus be led to regard the case, not as pleurisy, but as intestinal disorder, with fever. In any such doubtful case, it is well to bear in mind that children may, after they can talk, describe the nature and seat of their sufferings very inaccurately; and if, as often happens in these cases, they refer the pain to the right hypochondrium, you should not forget that pain in that situation is, at all ages, much oftener connected with disease of the pleura than of the perito-



neum; and, lastly, that the increase of discomfort produced by pressure on the abdomen may have been due to the additional impediment thereby offered to the already labouring respiration.

In most cases of pleurisy in childhood, careful auscultation will preserve us from error. Still, the information that it yields is more limited in the child than in adult age. The evidence afforded by the various modifications of the voice-sound are much less marked, owing to the feebleness of the voice in early life, while we cannot induce the child to speak several sentences, or utter several words in the same pitch of voice, in order that we may find how far the voice is altered. For the same reason, too, we cannot test the difference between the two lungs by the vibration of the voice perceived on applying the hands to either side of the chest—a means by which, in the adult, we are often assisted in determining between a solidification of the lung from pneumonia, and the distress consequent on pleurisy with effusion. Another circumstance which, in the child, increases the difficulty of distinguishing between pleurisy and pneumonia is, that in the latter, children sometimes inspire so slightly as not to produce any crepitation, so that, in both cases, we may have impaired resonance on percussion, with scanty admission of air, and a bronchial character in the respiration, but without any other morbid sound. In the child, too, we lose the very valuable information which the presence of the expectoration in the pneumonia of grown persons affords, when contrasted with the absence of all expectoration as an attendant on the dry cough of pleurisy. With the advance of the disease, doubt as to its nature is removed; it is at its commencement only that mistake is possible. But even then, and in spite of all the circumstances which have been enumerated as tending to mislead, you will seldom be wrong if you regard as an instance of pleurisy, any case in which symptoms like those of pneumonia having set in suddenly and severely, auscultation fails to detect the crepitus of pneumonia, and discovers only feebleness of the respiratory murmur on one side, with or without a more or less marked bronchial character in the breathing.

But we may now pass to the consideration of the *treatment* of acute pleurisy in childhood, a subject which need not detain us long, since the age of the patient in no respect alters the principles which must guide our conduct. If seen sufficiently early, and treated with due activity, cases of acute pleurisy in infancy and childhood nearly always have a favourable termination, and in almost every instance that has come under my observation in which the issue of the disease was unfortunate, either all treatment had been neglected till the children were past hope, or the nature of the complaint had been mistaken, or the treatment followed had not been sufficiently active. This last error it is of great moment to avoid, for acute inflammation of the pleura in childhood runs its course with greater rapidity to a more speedy fatal issue than in the adult. Of seven fatal cases of acute pleurisy in childhood, of which I have preserved a record, three ended in death on the sixth day, one on the ninth, one within a fortnight, while one of the remaining two terminated in thirty days, and the life of the child in the seventh case was prolonged for several months.

In almost every case, provided the symptoms be at all urgent, and the child's previous health have been good, general depletion should be resorted to, and you need not be afraid of carrying this first bleeding to syncope, since children generally faint after the abstraction of a comparatively small quantity of blood from the arm. It will be almost always necessary to follow this up by local bleeding, but it is desirable to wait for three or four hours, in order that you may be enabled to estimate the effect produced by the previous venesection. A second bleeding from the arm is seldom needed, and may almost always be avoided if local depletion be not too timorously practised. In the acute stage of pleurisy it is better to draw the blood by leeches than by cupping, since the side is often so tender that the pressure of cupping-glasses would be unbearable. After depletion, one chief reliance is to be placed on calomel which should be freely given in combination with opium or Dover's powder. Antimony, which often renders us such good service in pneumonia, is here of little use: and though it may somewhat diminish the frequency of the breathing, it exerts little or no influence upon the local mischief. A pleurisy treated thus actively, is sometimes overcome in the course of 24 or 48 hours, so that nothing remains of symptoms which had ap-

peared so formidable. Often, however, after the acute symptoms have subsided, the affected side remains dull, and the respiration scanty for weeks together, and now is the time when the use of blisters, associated with the exhibition of small doses of calomel, will be of most essential service, and will generally effect the complete absorption of the fluid, and the restoration of the patient to perfect health.

This, however, is not always the case; but sometimes, in spite of remedies perseveringly employed, one side of the chest continues full of fluid; and the question then comes before us whether it will not be expedient to let out that fluid by mechanical means. Many most important considerations are, as you know, involved in the question of performing paracentesis of the chest; but the indications for its performance are the same in the child as in the adult; while my own experience would lead me to conclude that cases in which the operation is necessary, are of very rare occurrence in early life. (See *Report*.)

ART. 101.—*On Atalectasis Pulmonium.* By Dr. WEST.

(*Medical Gazette*, Oct. 22, 1847.)

[Imperfect expansion, or partial persistence, of the *fœtal* condition of the lungs after birth, is a condition which has only recently attracted attention; and we therefore avail ourselves of the present opportunity of laying a succinct account of the affection before our readers. Dr. West observes that it presents itself under two different circumstances:—]

1. As a congenital condition; a more or less considerable portion of the lung never having been penetrated by air.

2. As an acquired condition; portions of lung which were once freely traversed by air ceasing to admit it, not from alteration of structure, but from simple collapse of the pulmonary tissue.

If the body of a newborn infant, or one which has survived its birth but a few days, be examined, patches of lung of a dark red colour, and depressed below the surrounding tissue, are sometimes found. These darker portions, which exactly resemble *fœtal* lung, are solid to the touch, do not crepitate, and sink in water. They are not friable, and their cut surface is perfectly smooth, like that of muscle. . . . It is usual to find, in connection with this state of the parenchyma of the lungs, that the pulmonary vessel contain less blood than usual, that the foramen ovale is unusually open, and the ductus arteriosus imperfectly closed. Sometimes bronchitis attacks a lung thus affected, and there is then often a state of congestion of the lungs which renders the contrast between the collapsed and the healthy lobules less striking.

Cases in which this condition of the lung exists, usually present the history of the child having been stillborn, and though resuscitated after a time, yet still never crying loudly like other children. Even after breathing has gone on for some time, such children appear feeble; and though they have attained the full term of *fœtal* life, yet they can scarcely suck. An infant thus affected sleeps more than newborn infants generally do; its voice is more feeble; and the chest is little, if at all, dilated by the respiratory movements. The temperature falls, the skin becomes pale, and the lips grow livid. The difficulty of sucking increases; the voice grows weaker and more whimpering, or even altogether inaudible; while respiration is attended by a slight r  le, and convulsive movements occur frequently. Any sudden movement suffices to bring on the convulsive movements; but even when perfectly still, the child's condition is not uniform, but it will become suddenly convulsed, and during the seizure the respiration will be extremely difficult, and death will seem to be impending. In a few minutes, however, all disturbance ceases, and the extreme weakness, inability to suck, and its feeble voice are the only abiding indications of the serious disorder under which the child is suffering. Death usually takes place at the end of a few days, or weeks.

[The treatment of this condition is laid down by Dr. West as follows:—]

The importance of maintaining an equable temperature around every child in whom respiration is not duly performed, cannot be too much insisted upon, and this temperature ought to be below 70  . Benefit often accrues from the use of the warm bath at 100  . The child should not be allowed to remain longer than five

minutes in the bath, and should be immediately enveloped in hot flannels. The back and chest should be rubbed once or twice a day with a stimulating liniment. If the child be very feeble, stimulants may be given, as the compound spirit of ammonia, in milk. The daily employment of a gentle emetic has, in some instances, appeared to be of service—not merely by relieving the air-tubes of any mucus that may have accumulated there, but by inducing deep inspiration, and thus aiding the more complete establishment of respiration. As the child improves, tonics may be substituted for direct stimulants. The child should be put to the breast, unless it be very feeble; but in this case it ought not to be allowed to exhaust its strength in fruitless attempts to suck. It will be better to draw the breast, and give the milk by a spoon. This plan must be persevered in; nor must the supervention of symptoms of an apparently acute character induce too wide a deviation from it.

ART. 102.—*On the Diagnostic Value of Tears in Infantile Diseases.* By M. TROUSSEAU.—The author states as a general rule, that when the infant sheds tears it is not dangerously ill; and, on the contrary, the absence of weeping indicates a severe disease. He regards this to be so true as to deserve to be considered as an aphorism. He does not deny, however, that there may be exceptions.

*Gazette des Hôpitaux, and Revue Méd.-Chirurg., Jan. 1848.*





# REPORTS

ON THE

PROGRESS OF THE MEDICAL SCIENCES.

*January—June, 1848.*

THE intention of the following Reports is to pass in review the principal additions to each department of Medical Science, which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful, will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and disease.



## I.

# REPORT ON THE PROGRESS OF PRACTICAL MEDICINE, PATHOLOGY, AND THERAPEUTICS.

BY THE EDITOR.

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(The figures in the parentheses refer to corresponding articles in the ABSTRACT.)

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## PART I. GENERAL PATHOLOGY.

### § I.—*Diseases of the Blood.*

1. *Scurvy*.—Having devoted considerable space to this disease in our last Report, it is not our intention to do otherwise than allude briefly to communications upon the same subject, which have subsequently appeared.

In an important communication by Dr. Garrod,\* the author endeavours to show, and with much appearance of truth, that the proximate cause of scurvy is a deficiency in the salts of potash contained in the blood. He has further determined, that, in all the dietaries of scorbutic patients, potash has been deficient; and, conversely, that in those aliments which are found to be beneficial in the disease, that salt exists in large quantities. As a practical fact, elicited by his researches, he states that scorbutic patients may be restored by the simple addition of potash to their diet, without other alteration. This communication is made in a philosophical spirit, and merits the attention of the political economist no less than of the physician.

A Report on scurvy, as it appeared on board an American vessel of war, has been furnished by Dr. Foltz,† a surgeon in the United States navy. It contains neither facts nor deductions which offer any features of novelty, but both of which serve to confirm the opinions expressed in our former Report, of the important part played in the causation of the disease, by the deprivation of fresh vegetables combined with extra labour and deficient ventilation. The author particularly insists upon the value of the potato as an antiscorbutic, thus agreeing with several writers mentioned in our last volume.

### § II.—*Zymotic Diseases.*

2. *Fever, Epidemics of*.—The past year has, as our readers are well aware, been signalized by the almost universal occurrence of outbreaks of fever, varying in intensity, but, for the most part, exhibiting a malignity which has been followed by unprecedented fatality. Independently of the interest which attaches to these fearful visitations as matter of scientific reflection, the recent epidemic may claim a deeper hold upon our minds, of another character, arising from the awful ravages committed among our own ranks, and the consequent sacrifice of every worldly comfort to hundreds of those helpless ones in whom we ought all to take a personal interest. In perusing the weekly obituaries of our brethren, in Ireland more especially, it is painful to observe for how paltry a remuneration these martyrs to science and humanity have been made to stake their own lives—their children's fortune; and, in spite of the unworthy motives attributed to their reception of the pittance by the editor of an Irish Medical Journal, the conviction is forced upon

\* Monthly Journal of the Medical Sciences, Jan. 1848.

† American Journal of the Medical Sciences, Jan. 1848.

us that these noble-minded men thought it due to the character of their profession, rather, though unrewarded, to minister to the disease and death around them; than to condescend to higgie, in the hour of danger, for an increase of pay.

Histories have been furnished of several of these epidemics, or rather of the same epidemic as it appeared in different localities, of the principal of which we purpose to give a brief analysis.

Dr. Paxton,\* of Rugby, describes fever as it appeared in a mild form in that neighbourhood. It is stated by him to have been generally preceded by diarrhoea, and to have rarely been fully developed when that symptom was judiciously treated. The febrile symptoms are said to have declared themselves under three degrees, and were recognized as follows:

The countenance expressed stupefaction; chills followed by heat occurred every half hour, with headache, quick pulse, furred tongue, epigastric pain, loaded urine, &c. These were the symptoms of the milder form, and soon subsided. If, however, the noxious influence had been more decided in its effects, the second degree of fever was observed. This differed from the first, chiefly by its greater intensity. The patient, at the early stage, had a deep flush on the cheek, alternating with paleness; dry skin; thirst; thick, drab-coloured secretion covered two-thirds of the tongue; the pulse rapid, i. e. from 110 to 130; urine turbid. Uniformly there was a certain amount of cerebral disturbance, indicated by moaning or crying out, with sudden sharp pains. A restlessness and delirium existed in most cases, and led one to suspect meningitis. After the subsidence of the latter symptoms, marked pervigilium was observed, which was followed by unusual torpor.

The third degree exhibited the common characteristics of typhus.

In referring to the treatment of this epidemic, Dr. Paxton takes occasion to criticize the opinion that wine, and a cordial plan of treatment is necessary in fever, and illustrates his position by the detail of cases in which mischief was supposed to have arisen from this practice. He proceeds to state, that the successful treatment of this epidemic depended on the strictest attention to regimen: errors in diet were fatal. All kinds of stimuli had the effect of increasing arterial action, congestions, and cerebral disturbance. It was only in the stage of *perfect subsidence* of the malady, that wine could be taken with impunity. He remarks that he had often to regret the permission he had given to use wine at too early a period. The most mild species of nutriment were the best for the patient. Time after time has he known a generous diet, such as beef-tea and wine, to derange the viscera, and to have a direct tendency to excite organs already too much excited by febrile phenomena, and the consequences were invariably a correspondent depression of the vital powers. The principle which suggests wine, and the highest nutriment in low fever, in theory is, he says, plausible enough. "To oppose what was esteemed strength to weakness, is a theory which readily gains an ascendancy in the minds of those who are ignorant of the management of diseases. They are haunted by the single perception of *debility*, but the exhibition of wine, to counteract the debility, only involved the patient in additional dangers. At the advanced stage of fever, wine is the medicinal extreme unction for the patient's dismissal. In the earlier stages, it may be symbolized by the golden cup filled with abominations." There could be no compromise, he observes, between wine and the Rugby fever. It was not long before he found, that either the nature of the fever, or the peculiar habit of persons in this locality, would not allow of the administration of stimulants without decreasing the chances of recovery.

These remarks respecting the use of wine in fever, are certainly not in accordance with the opinions of the best authorities, and differ widely from the views expressed in the following communication by Mr. Bree, of Stowmarket.

Mr. Bree gives the history of an epidemic fever as it was witnessed in the parish of Finborough, in Suffolk, the account of which embraces points of great interest, more especially as respects the disputed point of contagion, the operation of which on the cases in question he establishes beyond the possibility of doubt. In the treatment of the disease he exhibits a full acquaintance with what we believe to

\* *Prov. Med. and Surg. Journal*, Nov. 3, 1847.

be the most satisfactory therapeutics of fever at present known. The indications he kept in view were:

1st. To obviate the effects of local congestion, and of what he believes to be in fever altered blood; which effects, again, he believes we see in or about the capillary system, or in ulceration of Peyer's glands, &c.; and,

2d. To prevent his patients from dying by asthenia; to keep them, in fact, alive.

The first indication he attempted to fulfil by the use of the pulvis sodæ comp. of Guy's Hospital, a most useful medicine in these cases. It is composed of carbonate of soda, compound chalk powder, and calomel; sixteen grains contain one grain of calomel. Of this he gave from five to twelve grains every four hours, with or without a solution of the carbonates of soda and ammonia.

The second indication he endeavoured to fulfil by the administration of port wine, with or without brandy, in large quantities.

In the cases he has detailed there were frequently abdominal and thoracic complications; in one case there was decided pneumonia, but he did not on this account omit the wine, though he pushed on the mercury. He was equally regardless of delirium, which is, probably, always an effect of innervation in these cases; and of the dry tongue. Whenever he found unequivocal indications of debility, as evidenced by a quick, thready, irritable pulse; *trembling*; sordes about the mouth and teeth, &c., he invariably gave wine. The result of the cases related fully bears out the propriety of the practice.\*

The fever which has recently prevailed in and about Kilkenny has been described by Dr. Lalor† under the name of "gastro-enteric fever," derived from the prominence of gastric and intestinal symptoms. The invasion of this form of fever was sudden, setting in, in general, with rigors, followed by delirium or dullness of intellect, vomiting, diarrhœa, pains in the joints, &c. After the continuance of these symptoms for six or eight days, the fever usually subsided. The relapses, which were frequent, and often fatal, assumed one of four forms:

1. Pyrexia attended with severe pains, similar to rheumatism, often terminating favourably in from three to seven days. 2. Pyrexia, with distressing nausea, and vomiting of a grass-green fluid; prostration; cold, clammy skin, &c. 3. A combination of the two preceding forms. 4. A species of protracted fever, with nausea, irregular bowels, and variable pulse; termination usually favourable.

In 1845, a purpuric eruption began to be a concomitant of the fever. In the spring of 1846, this combination became more general, the fever at the same time putting on a more typhoid type with diarrhœa, general œdema, and gangrene. The eruption generally appeared first on the upper part of the chest, subsequently on the abdomen and extremities, seldom on the face. In bad cases there were large distinct bullæ filled with a bloody serum. The gangrene usually appeared in the mouth, the pudenda, or anus; bad sores and gangrene of the extremities were rare.

The treatment followed by Dr. Lalor in this fever was, in the first instance, expectant. In collapse, external warmth and stimulants were employed. Blisters were found useful for the præcordial pains, but leeches and depressing diaphoretics were ill borne. In the relapses, a stimulating treatment was imperatively called for.

The post-mortem appearances in fatal cases of this fever were chiefly remarkable in being associated with or produced by purpurous extravasations, similar to those on the skin. These were found on the peritoneum, pleura, mucous membrane of the stomach, intestines, and bladder. Apoplectic effusions were also found on the lungs and in the substance of the muscles. On the mucous surfaces these blotches terminated in ulceration, which were of two kinds, one small and circular, with a disposition to granulate, the other sloughy, with fungous granulations similar to the spongy sanies of scorbutus. The liver was of normal size, mottled and friable; the spleen was generally enlarged; the kidneys sometimes presented purpuric spots; the heart's substance generally softened.

In alluding to the causes of this epidemic, Dr. Lalor hesitates to attribute it en-

\* Prov. Medical and Surg. Journal, April 15, 1848.

† Dublin Quarterly Journal, Feb. 1848.



tirely to the effects of famine: but he admits that the purpuric or scorbutic character was associated from the date of the failure of the potato crop, and increased as destitution advanced. The fever appeared to be decidedly contagious.

Mr. Bottomley, of Croydon, has also published an account of fever as it appeared among the Irish labourers who had come into that part of the country to get up the harvest. The type of fever is shown to be the "simple continued," with tendency to typhoid depression. The writer states that there was no reason to believe it infectious, unless in the event of close crowding of the patients and inattention to ventilation.\*

Lastly, Dr. Orr has furnished a historical and statistical sketch of the epidemic fever in Glasgow: and, amongst other useful information, gives a vivid picture of the dangers which were encountered by the medical attendants. In one parish alone, seven out of seventeen surgeons took fever, three of whom died. In another district, containing seven surgeons, three perished. In all, no fewer than 117 persons, engaged in attending fever patients, contracted the disease, of which number 30 were ascertained to have died.†

3. *Cold-water Treatment of Fever.*—Dr. Nevins‡ confirms the advantages said to be derived from the treatment of fever mentioned in our former volumes (V, art. 2; VI, art. 1.)

4. *Intermittent Fever.*—M. Fleury has presented a memoir to the French Academy of Sciences, on the use of cold douches in ague.

He was led to these researches by the assertion of Dr. Currie, that the accessions of ague might be prevented by the affusion of cold water, and that by its repetition four or five times, the disease might be entirely cured. M. Fleury has employed this means one or two hours before the expected paroxysm, in the form of a general douche, and in that of a local one to the region of the spleen.

The ends attained by the above plan he believes to be,—1. A shock exerted on the nervous system, and on the general capillary circulation. 2. The opposing of a vigorous reaction and general stimulation of the surface to the cold stage of the fever. 3. A modification of the circulation of the spleen, combating congestion of that organ.

He has pursued this treatment in eleven cases of intermittent fever. In seven of them the disease was recent, and there had been but from three to seventeen paroxysms; quinine had not been administered in any one. In two cases, the spleen preserved its normal size: in five, it was enlarged: a cure was effected in all. In one, a single douche sufficed to cut short the fever. In two others, two affusions were necessary to do so, and to restore to the spleen its natural dimensions. In the remaining four, affusion was practised three times.

In those patients where two or three douches were used, the effects produced were constantly the same. By the first application, the accession was retarded two or three hours; the rigors less violent, and shorter by one-half or five-sixths the time: the heat and headache were equally lessened; and the total duration of the fit was diminished by at least one-half. Age and the type of the fever did not exercise any appreciable influence over the effects of the treatment. Where, however, the volume of the spleen was larger, the time required for the cure was augmented. Four patients had suffered from the disease for from two to eleven months, having had several relapses, and resisted the action of sulphate of quinine, and presented the anæmia, emaciation, anorexia, &c., seen in those who have been long affected by ague. Three douches were required in two of these cases, and five in one other, to remove the fever: but from eight to eleven were necessary to cause the splenic engorgement and the cachectic symptoms to disappear. In one case the liver was very greatly enlarged; but this condition disappeared by perseverance with the affusions.

M. Fleury arrives at the following conclusions:—1. In the treatment of recent intermittent fever, simple, and with little or no engorgement of the spleen, cold douches may be substituted for quinine. 2. In the treatment of old-standing ague, where several relapses have occurred, and there is considerable enlargement of the spleen, or of the liver, with a cachectic condition, cold affusions are to be

\* Prov. Journal, Dec. 29, 1848.

† Ed. Med. and Surgical Journal, No. 175.

‡ Med. Gazette, Jan. 21.

preferred to quinine; for they cut short the fever, restore the viscera to their natural volume, and remove the cachexy more rapidly and more safely than quinine: the latter, in large doses, not unfrequently acting injuriously upon the nervous system, or on the digestive organs.\*

5. *Glanders, and Diffuse Cellular Inflammation, Analogy between.*—Mr. Frazer adduces three cases of diffuse inflammation, in which, although no glanderous infection could be traced, true glanderous bullæ appeared; from this he would deduce the analogy, if not identity, of the two forms of disease.†

6. *Cholera.*—The communications which have been called forth by the anticipated approach of this disease for the second time have been numerous; too much so, in fact, to allow of the possibility of noticing all in the present Report. In speaking, moreover, of several of the debateable points connected with the history of the disease, it will be our object to be as brief as is consistent with the importance of the subject, taking further into consideration that much of the recent information upon the subject has been already laid before our readers, by Dr. Guy, in his last Report on Public Health. The purely sanitary part of the question we shall still leave to be discussed by Dr. Guy in his future Reports, as part of the general question of hygienic medicine.

One of the most important of the recent contributions to the history of cholera is a work by Dr. Parkes, entitled, “*Researches into the Pathology and Treatment of Asiatic or Algide Cholera*,” containing the results of extensive practical experience with the disease in India, and is distinguished by a careful inquiry into its symptomatology and post-mortem appearances as the only basis upon which a just view of its nature can be founded. It may be stated in anticipation, that the author’s view of the pathology of Asiatic or algide cholera is, that it is “primarily a disease of the blood, and that the proper and distinctive symptoms of the disease are induced by the changes which take place in the function of respiration directly consequent on the alteration of the blood.” In order to do justice to the author’s method of substantiating this opinion, we must follow him through the successive chapters of his volume.

The *post-mortem* appearances in cholera, the appreciation of which forms the first step in the line of argument adopted, are drawn from a comparison of forty-six dissections of males, averaging an age of twenty-seven years. From these he determines, that the most usual appearances in the cranium, consist in the accumulation of blood in the veins of the dura and pia mater, with more or less serous effusion. The most common appearances in the lungs were, the presence of blood in the large vessels mostly or solely, and collapse and deficient crepitation in the pulmonary textures. The right side of the heart and pulmonary arteries are generally full of blood, the left side and aorta were generally empty. The condition of the blood itself was noticed in thirty-nine cases, and the most important changes were observed to be as regards its coagulation and colour. It appeared probable to the author, “that there was a deficiency of fibrine, or a great tendency to its separation and deposition, and thus the red particles were partially dissolved in the serum. In the abdomen, it was found that there was some accumulation of blood in the larger branches of the vena porta and hepatic veins; thus the gall-bladder was moderately full, and the bile thick and viscid. The spleen did not offer any changes which could be attached to the disease itself, some of the patients in whom this organ was found to be in an abnormal state had suffered from the severe intermittents of the climate. The kidneys were unaltered in the majority. The stomach was either distended with a watery fluid not coagulable by heat, or it was corrugated and contracted. There were in some cases patches of hæmorrhagic congestion. The small intestines were generally dilated, and in every instance contained a peculiar fluid. The agminated and solitary glands were enlarged, and the mucous membrane was generally injected, but not perceptibly thickened. There was no ulceration of the agminated glands in any case. In two instances, the solitary glands were ulcerated. The colon was contracted in about half the cases, sometimes to an extraordinary extent. It did not seem to bear any relation to the amount of the purging. There were no ulcerations or change in consistency of the mucous membrane.

\* Bulletin des Académ., and Lancet.

† Dublin Medical Press, March 15, 1848.

Speaking next of the peculiar fluid found in the intestines, which was one of the constant appearances, the author describes it as white, or chocolate-coloured, consisting of a thicker and a thinner portion. The thicker lying in masses here and there: the thinner fluid sometimes coagulated by heat, but not generally; it precipitated nitrate of silver in every case. The author states that there can be no doubt that the thin rice-water evacuations consist of this fluid, and that they are composed of part of the water and salts of the blood, mixed with a protein compound. It is also probable, he states, that this compound is chiefly fibrin. The author further notices the two facts in conjunction—that the blood is deficient in its coagulable ingredients, and that the intestinal canal contained the ingredient in which the blood was deficient. The bladder was always contracted.

The chapter immediately following the minute description of the morbid appearances, of which ours is a greatly condensed account, is occupied with the *symptoms* of cholera examined separately, and, in a subsequent chapter, they are again viewed collectively. The author refers the chief phenomena of the disease to three heads, viz., the changes in the abdominal organs, in the thoracic organs, and in the muscular system: but what their mutual connexions and dependencies in the first instance are, he does not think it easy to decide. At a later period, the relations of one group of symptoms, as, for instance, the purging and vomiting to the collapse, can be more accurately determined. And here the author agrees with Orton, Kennedy, Copland, &c., that there is no absolute ratio between the two groups of symptoms; for it often happened that at the period when the algide symptoms were most developed, the purging had ceased, and in others of the most fatal collapse, the purging and vomiting had been trifling or absent. This is a most important fact, and entirely subverts the common notion that the collapse is due to the draining away of the fluid portions of the blood.

The relation between the vomiting and purging and cramps appears to be more intimate, and the author seems to have remarked that the latter depended mainly upon the distension of the bowels by the fluid, and were mitigated by its expulsion; he noticed, also, that the mere distension of bowels by injections reproduced them after they had subsided, thus evidently pointing out their reflex origin. The author concludes the chapter by stating that the algide symptoms are the pathognomonic features of the disease, and that the evacuations and spasms, though frequent, are not essential phenomena.

The fifth chapter gives us a general description of the symptoms of cholera. Excluding those anomalous and obscure cases which he terms pseudo-cholera, he includes a disease which presents features characteristic of the action of a morbid poison, having its periods of evolution, progress, and termination. The first period is brief, and the last or febrile state is the reaction of the system after its endeavour to eliminate the poison. This stage, as he observes, is not often seen, the intervening period being so generally fatal.

The premonitory symptoms of cholera are diarrhœa, colic, trembling, tinnitus, nausea, and a sensation of lightness across the chest; at other times there are more severe vomiting and purging. These symptoms may be cut short by treatment. If they are not checked, they lapse into the true choleraic symptoms, or these latter make their invasion at once.

These destructive symptoms are seen in the condition of the respiratory and circulatory system, and consist of the fearful group of algide phenomena, which are only too familiar to those who are practically acquainted with the disease. Some hours before death, the author has remarked a return of heat over the head and chest, while the extremities retain their dry temperature. This he regards as an unfailing indication of approaching dissolution.

In the sixth chapter, the author investigates the connection between the symptoms and post-mortem appearances. We shall not follow him closely in his lucid discussion of the debatable points which originate out of this question, but shall proceed to his division of the disease into forms or varieties depending upon the presumed changes in the blood, which, as we have said, he regards as the starting-point in the chain of morbid actions.

If the operation of the exciting cause, whatever it be, upon the blood, be overpowering in its effects, there is a complete and rapid arrest of the circulation, and the worst variety is produced, in which a mortal coldness prevails from the first.



If the cause act with less intensity, we have the second variety, in which the fibrin is less altered, and the circulation is not prostrated at once. In this the protein constituents are effused into the intestines. The third or least formidable variety commences with watery purging and vomiting, and may pass into the first and second forms after variable periods. The mere watery discharge is not of material moment, and the case is not fully developed as choleraic till perhaps suddenly, after several serous stools, one containing the true choleraic flocculi, is ejected. From this moment the true features of the disease become manifest.

Taking a retrospective glance, we observe that Dr. Parkes' theory of cholera is, that it arises from some poison, the impression of which is first made through the respiratory organs upon the blood. The changes induced in this fluid are mainly noticed in the condition of the fibrin, which loses its power of coagulation, or is taken from the blood, being poured into the intestines in the form of the flocculi known as the solid ingredient in the rice-water evacuations. Dr. Parkes places less stress upon the vomiting and purging than most writers, not regarding them as essential symptoms, or tracing any direct ratio between their severity and the severity of the case; but, on the contrary, he notices that the most severe forms of the disease were manifested by a complete suspension of the respiratory and circulatory functions without the appearance of vomiting and purging. The connection between them and the degree of muscular spasm he regards as more determinate.

With regard to the *propagation* of the disease, he is truly an anti-contagionist. (For his treatment, see ABSTRACT, art. 1.)

A pamphlet has been also recently issued by Dr. Gavin Milroy,\* with the twofold object of determining what are the means by which pestilential cholera is propagated, and what should be the leading principles by which its treatment, preventive as well as curative, should be attempted. The leading principle sought to be established is that of its non-contagiousness, and consequently of the utter uselessness of quarantine, cordons sanitaires and similar measures. This the author seeks to do, by a well-digested history of the present and former epidemic, including the narrative of numerous instances of failure of the most stringent quarantine regulations and their subsequent abandonment by several continental governments. The author also endeavours to strengthen his position by a comparison of the diffusion of the choleraic poison with that which gives rise to influenza, showing that the two have been in all important respects similar, and deducing therefrom, that, as the influenza is indisputably non-infectious, there are good grounds for reasoning by analogy that cholera is so also.

The essay, after some remarks upon the inutility of the so-called disinfecting agents, and the all-sufficient disinfecting powers of free ventilation, concludes with the instructions regarding the treatment of the disease which we have elsewhere given. (Art. 1.)

The impulse derived from the contemplated sanitary bill of Lord Morpeth has caused our medical literature to be inundated with pamphlets and less pretending communications, referring more particularly to cholera; some full of commonplace disquisitions upon sewers, insufficient ventilation, and so forth—all useful enough in the localities of their respective authors, but contributing nothing to the diffusion of real available information respecting the fearful disease with which we are now threatened. These productions we have not space to allude to individually, but are compelled to content ourselves with naming two, as possessing more than common merit: viz. a brochure by Dr. Starr, of Leamington,† and an essay on the "Present State of Knowledge of Cholera," by Dr. Knox,‡. The latter may be consulted as affording an elaborate and accurate *resumé* of the literature of the disease.

7. *Coexistence of Smallpox and Scarlatina.*—More modern experience has had frequent opportunities of disproving the Hunterian maxim, that two fevers cannot coexist in the same constitution; but the fallacy has seldom been more strikingly shown than in a case related by Mr. Marson, in which variola and scarlatina existed at the same time in the same subject. There is reason to suppose that such

\* The Cholera not to be Arrested by Quarantine, 1847.

† Discourse on Asiatic Cholera; London, 1848.

‡ Dublin Medical Press.

occurrences are not so rare as is imagined, as the author states that he has himself seen seven instances, and alludes to others scattered through various journals, the references to which are given in the original.\*

## PART II.—SPECIAL PATHOLOGY.

### § I.—*Diseases of the Nervous System.*

8. *Inflammation limited to the Lining Membrane of the Cerebral Ventricles.*—In an essay, published in the "Archives Générales," M. Rilliet alludes to the occasional occurrence of meningitis confined to the ventricles as a cause of chronic hydrocephalus. The disease, when thus circumscribed, originates, as does the peripheral form of the disease, in a state of apparently perfect health, and makes itself known by headache, vomiting, constipation, and fever. It differs, however, from the latter in the more constant occurrence of convulsions, and the late period at which the intelligence becomes disturbed.

9. *Delirium Tremens.*—Dr. Pliny Earle gives an analysis of the cases of delirium tremens admitted into the Bloomingdale Lunatic Asylum during a period of twenty-three years. The following comprises the most interesting facts elicited:

There were more cases admitted in the earlier years of the institution than at a later period, though in the interim the population of the city of New York had more than doubled.

The males exceeded the females in the proportion of 6—1.

Among males, the single men afforded the largest number of patients; among females, the married.

Merchants, traders, clerks, and professional men furnished more than half the number of patients.

The age at which the disease was most frequent was from 30 to 40.

Considering the severity of the disease, it was found to be very remediable; of 322 cases, only 20 died.

It appears that the treatment adopted varied much during successive periods; but no mention is made of that which was found most successful.†

10. *Apoplexy and Cerebral Softening—Diagnosis.*—If we consult the writings of Rostan and Lallemand, it would appear that the diagnosis of these two forms of cerebral disease is a matter of comparative facility; the first being sudden in its invasion, the other having certain precursory signs. That this broad distinction, however, will not hold good as a constant rule, must be familiar to those experienced in cerebral maladies, and has been recently insisted upon by a writer in the "Revue Médico-Chirurgicale."‡ Among the number of precursory signs of softening of the brain are mentioned tingling and pricking sensations in the limbs, cramps in the legs, loss of power and steadiness in walking, failure of the intellectual powers, hesitating speech, &c. It is, however, the author observes, equally certain that the same symptoms have been known to precede sanguineous apoplexy. Permanent contraction of the limbs has been regarded by Lallemand as pathognomonic of "softening;" the author shows that this symptom is also seen in apoplexy.

On the other hand, it is stated that the phenomena of ramollissement do not occur suddenly, as in apoplexy. The author shows that this is also a fallacy; and gives the instance of a man who suddenly fell down in a fit while micturating, in whom softening of the brain was the only morbid appearance. It appears, therefore, that there are in reality no trustworthy distinctive symptoms by which the two diseases can be recognized respectively.

11. *Epilepsy—Theory of Convulsive Diseases in general.*—This forms the subject of a comprehensive lecture by Dr. Marshall Hall, of which we proceed to give such an abstract as its laconic phraseology will permit. The author commences by alluding to the experiments of Flourens, proving that no irritation of the cere-

\* Med. Chir. Trans., vol. 30.

† American Journal of Medical Sciences, Jan. 1848.

‡ Dec. 1848.

trum or cerebellum, or of true cerebral nerves, can produce muscular action, and to his own researches, which prove that irritation of the spinal marrow may be induced through the medium of certain incident or excitor nerves. He then mentions the two series of causes of general convulsions, viz. centric, or that which originates in the cranium or spinal canal; and the excentric, or that which is seated in the peripheral nerves.

This irritation, centric or excentric, constitutes the first link of the chain of causes and effects, or symptoms in epilepsy. The second link consists in the excited action of certain muscles of the neck; the next step is the consequent compression of the jugular veins, and the venous system of the head and neck generally.

To this condition, arising from the compression of the jugular veins by the action of the platysma, &c., Dr. Hall applies the term sphagiasmus (σφαγίαξω, I strangle). If this is not succeeded by laryngismus, cerebral epilepsy, or the *petit mal* of the French, is produced. Laryngismus, more or less complete, and *odaxismus*, or biting of the tongue, complete the sketch of the epileptic paroxysm.

Proceeding to more detailed accounts of the epileptic seizure, the author notices, first, the

*Causes.* These are—1. Gastric, enteric, uterine irritation; *reflex*. 2. Irritation of the cerebral membranes, and pericardium; also *reflex*. 3. Irritation of the medulla in disease within the cranium; *direct*. 4. Shock to the nervous system from emotion, violent efforts, sexual excess; also *direct*. 5. Sleep. 6. Undue excitability of the spinal system from previous attacks, sexual excess, &c. 7. Exanthematic perturbation. 8. Exhaustion from loss of blood. 9. Albuminuria and diabetes.

Speaking of sleep as a cause of epilepsy, the author suggests that sleep itself is of the nature of sphagiasmus.

*Symptoms.* Whatever be the cause of epilepsy, the author states that sphagiasmus is the first symptom. From this arises the cerebral part of the epileptic seizure, the flashes of light or mist before the eyes, perversion of smell, loss of memory, &c. The immediate cause of this action of the muscles of the neck, like the cause of action of the capillaries in blushing, &c., seems to be unknown.

If to sphagiasmus, and the consequent cerebral congestion, laryngismus is added, general convulsions, or true spinal epilepsy, ensues. There is biting of the tongue, frightful distortion of the eyes, limbs, and general frame; there are foaming at the mouth, protrusion of the tongue, and may be expulsion of the fæces, urine, or semen. The convulsion sometimes leaves one limb or side feeble; at others, and more generally, it is attended by deep coma, or followed by a paroxysm of mania. After repeated attacks the memory may fail. The author thus recapitulates his views of the epileptic attack:—

1st. Some source of irritation acting in a reflex or direct manner on the spinal system. 2d. Convulsion of certain muscles of the neck, compression of the jugular veins, and congestion of the cerebrum. 3. Laryngismus—spinal epilepsy, congestion of the encephalon in a tenfold degree, with all its dire effects on the intellect and limbs.

*Diagnosis.* The chief difficulty is to distinguish epilepsy limited to cerebral symptoms, from fainting, indigestion, &c. When laryngismus, and especially biting of the tongue occurs, there can be no doubt that the case is epileptic. The last symptom the author considers to be diagnostic.

The distinction between hysteria and epilepsy is drawn by the author from the absence in the former of sphagiasmus, laryngismus, and odaxismus. In hysteria there is often a species of laryngismus; but the author states that it is very different from the epileptic laryngismus.

The peculiar symptom termed sphagiasmus by the author is assumed by him to be produced by the action of the platysma myoides on the jugular veins, an action which we shall see, in a future part of this Report, is also adduced by another writer to explain the “bruit du diable.” The physiological action of this muscle on the vein is supposed by Dr. Marshall Hall to be exhibited in the production of sleep, and in the phenomena of blushing. The pathological effect he believes to be epileptic seizure, or mania, or apoplexy.

*Treatment*—The author observes, on this point, that all irritation is to be removed,



whether in the stomach, bowels, uterus, &c. To relieve the sphagiasmus, the head should be raised, and forced deep inspirations should be taken, or caused, by dashing cold water on the face. The rest of the treatment during the paroxysm is confined to preventing injury.

The author lays great stress on the regulation of sleep in epileptics. It should not be allowed to be too deep, or to be abruptly broken. The disposition to augmented excitability is to be remedied by free exposure to the air, with exercise. There is no royal road to the cure of epilepsy. The idea of a remedy for the disease, the author says, is unphilosophical. The treatment should consist in a well-administered plan, embracing every means of good, and avoiding every means of harm.\*

12. *Treatment of Epilepsy by Tartar-emetic Frictions to the Scalp.*—M. Mettais narrates ten cases in proof of the efficacy of tartar-emetic ointment rubbed into the scalp, so as to induce free suppuration. He states that the counter-irritation should be maintained for a considerable time, as relapses have occurred when the suppuration has been too soon suspended.†

13. *Peculiar Neuralgic Affection of the Forearm.*—M. Gamberini describes a neuralgic affection which commences at the extremities of the fingers, and extends to within an inch of the elbow. It appears always at night, and disappears towards morning. Women are especially prone to it. The author found that, although the periodic nature of this affection was so distinctly marked, yet no benefit was derived from the administration of quinine. The most certain relief was obtained by friction with belladonna.‡

14. *Tetanus.*—Our Extracts (14–15) contain the reports of two successful cases of tetanus; one by quinine in large doses, the other by the action of ether. One similar to the last has also been subsequently reported by Dr. Theobald, of Baltimore, in the person of a man, æt. 27, who had received a serious injury of the hand from the blasting of a rock. It was, however, a case of chronic tetanus; for the ether was not commenced till the seventh day of the disease (most fatal cases of acute tetanus dying on or before the fourth day), and was continued daily till the twentieth. The patient also took hydrocyanic acid in large doses.§

## § II.—Diseases of the Respiratory System.

15. *Auscultation.*—Although the practice of auscultation has been zealously followed for a period of more than twenty years, little has been added comparatively to the principles established by Laennec and his immediate followers. Whenever, therefore, a new work appears giving a systematic account of the various phenomena discovered by auscultation of the chest, we look, as a matter of course, for the old matter; it may be dressed up in a more modern guise, but not materially altered or at all improved. An exception, however, to the usual routine of writers on the physical diagnosis of the chest is to be observed in the last published book on the subject, by Dr. Blakiston;|| for it must be allowed, after attentive perusal, that if he has not contributed original matter, he has at least rendered the subject as attractive as possible, by bringing it up to the latest researches of the time, instead of confining it to the stale rechauffé of stethoscopic knowledge which has been so long before the profession.

Dr. Blakiston divides the respiratory sound, as is commonly done, into three portions, the tracheal, the pulmonary, and the bronchial. Each of these he admits to be produced by the passage of air over the respective portions of the respiratory apparatus. Speaking of the cause of the second, or pulmonary sound, he notices the theory of M. Beau, that it is produced in the fauces and glottis, and it is its reverberation that is heard through the thoracic parietes; he does not, however, adopt this view, but adheres to the old and more feasible one, that it is caused by the rushing of the air through the smaller bronchial tubes (p. 21).

The author's observations on the intensity and propagation of the pulmonary sound, and its modification and replacement by others, are much the same as are

\* Lancet, Oct. 30.

† Gaz. Med., Feb. 1848.

‡ Ibid.

§ American Journal of Medical Sciences, Jan. 1848.

|| Practical Observations on Certain Diseases of the Chest. Lond. 1848.

usually met with; the only paragraph calling for special remark being that in which he expresses his doubts of the value of the jerking respiration as a sign of incipient phthisis.

The rationale of the production of the *râle crepitant*, is a disputed point among stethoscopists. Dr. C. B. Williams attributes it to the passage of air through fine bronchial tubes, compressed by defricition, and Dr. Walshe to the unfolding of the vesicles, the sides of which he supposes to adhere. Dr. Blakiston combats both these theories, and decides with the generality, that it is due to the passage of air through a thin viscid fluid. That such conditions are sufficient to produce it, he shows by the experiments of glass tubes filled with gum water.

On the subject of the *practice* of auscultation, the author has some judicious and truthful observations. Referring to the axioms on the transmission of sound laid down by him in a former chapter, he states his convictions of the superiority of a solid over the tubular stethoscope, and it adds not a little to the correctness of his judgment to know that Dr. Watson, who to a profound medical knowledge unites a close acquaintance with mathematical science, also approves of it. On the strength of such high recommendation, we have for some months past given the solid stethoscope a trial, and we feel bound to say, that we have not found it superior to the hollow instrument. For the appreciation of the more delicate shades of smoothness or roughness of the breath-sound, it has indeed appeared inferior. At a further page Dr. Blakiston compares the facility of acquiring a practical knowledge of auscultative aid with the comparatively few persons who attain even to mediocrity. Here we agree with him. It is the "*Pons Asinorum*" with the majority. A man easily learns to cut for stone with *éclat*, or becomes a celebrity in the emergencies of midwifery, but the same man will fail to recognise pneumonia, and will not venture a diagnosis in diseases of the heart.

In connexion with the subject of auscultation, we next call attention to some papers by Mr. Sibson on the position of thoracic organs in the different states of ordinary and deep inspiration. As the series is not yet complete, we must reserve a detailed mention of these valuable essays for a future Report.\*

16. *Acute Pleurisy*.—Dr. Blakiston considers that venesection has been too highly praised in the treatment of this affection. He now generally refrains from it especially in persons who are not robust. He places more confidence in leeches, or friction of the affected side with mercurial ointment containing  $\frac{5j}{\text{}} of opium to the ounce. Between each friction he envelopes the chest in a linseed-meal poultice.†$

17. *Chronic Pleurisy*.—The same author has watched this disease with great care, in order to determine whether it is frequently the precursor of phthisis. Of 53 cases in which the results have been accurately determined, no such consequence has been observed. He has also ascertained that the contraction of the side which frequently follows the absorption of the fluid, more generally disappears than has been supposed. Two years were found sufficient, in many cases, to restore the side to its normal proportion.

The treatment adopted in these cases generally consisted of mild iodine and mercurial frictions, and cream of tartar as a beverage in the form of imperial. Mineral tonics were also soon resorted to. In more advanced cases blisters were applied, and stronger mercurial frictions, and it was found advisable to support the strength with quinine, wine, &c. Paracentesis was necessary only in a single instance.

18. *Pneumonia*.—Dr. Blakiston introduces a new division of pneumonia into *serous*, *sero-plastic* and the *plastic* forms, the existence of which, however, he determines from analogy rather than actual observation. The *plastic* form of the disease, of which he gives two examples, appears to be identical with the chronic pneumonia of Andral.

In the treatment of pneumonia, the author draws a just distinction between the *primary* and the *secondary* forms of disease. In the treatment of primary pneumonia, while he admits the occasional advantages of blood-letting and mercury, he places his chief reliance on tartar emetic in one-grain doses, which he considers as suitable to every stage of the disease.

In *secondary* pneumonia, as it occurs after injuries, or during the course of typhus,

\* Medical Gazette, March, April, and May.

† Op. cit. p. 261.

he does not venture on antimony, but prefers mercury and counter-irritation, with the liberal exhibition of wine and nourishment.

On the subject of the treatment of pneumonia by tartar emetic, we find some observations by M. Leoncio de Sobrado, giving the results of his individual experience. He comes to the conclusion—1st, that tartar emetic cures pneumonia more surely than the purely antiphlogistic system; 2d, it causes a rapid subsidence of the acute symptoms; 3d, the tartar emetic treatment is often followed by aphthous ulceration of the mouth and fauces; but this symptom is readily amenable to slightly astringent gargles.†

19. *Phthisis Pulmonalis*.—The natural causes and treatment of this disease occupy about seventy pages of Dr. Blakiston's volume. Tubercle, the element of the disease, is regarded as an error of nutrition, and its deposition as preceded by local hyperæmia. Although never seen but in the solid form, he admits, with Vogel, that it is secreted in a fluid form, becoming afterwards solid. The supposition of Addison that tubercle is but an abnormal accumulation of epithelial cells, he considers as irreconcilable with the received views of nutrition.

Respecting the contested nature of the gray granulation, the author states his conviction that it has no essential connexion with tubercle, but that it is an imperfectly organized substance, which, if formed in a non-tubercular patient, may remain stationary; but under the contrary circumstances may retrograde into real tubercle. In this sense, he observes, it may in some cases be considered as the first stage of tubercle, but not in the sense admitted by Lænnec and Louis.

The causes of phthisis are arranged properly by the author into two categories, the causes of the *diathesis* and the causes of its local manifestation. With regard to the former, the difficulty of arriving at any conclusion which can be considered as logically satisfactory, may be surmised from the statement of the author, that although he has accurate notes of the origin and termination of 9000 cases of phthisis which he is able to analyse, he still thinks a larger experience is necessary. Such experience will, we trust ere long, be afforded by the accumulated experience afforded by the Hospital for Consumption and Diseases of the Chest, of which we take pride in having been the originators. In the meantime the author proceeds to state how far his results agree with those of Louis.

This physician and philosopher admits as causes of the tubercular diathesis, *lymphatic temperament, female sex, continued febrile action*, and does not deny that of *hereditary transmission*. He rejects as causes *bad food, impure air, depressing passions*, climate and temperature, trade and occupation, and inflammation of the thoracic viscera.

The author agrees as regards the influence of temperature, sex, and febrile action; but he differs in considering that mental and physical depression have a more special action than Louis admits. The influence of hereditary transmission is also fully acknowledged in reference to the identity of the strumous and tubercular diathesis.

On the subject of the causes of tubercular deposition, the author states that all causes which tend to local determination of the blood, facilitate the deposition of tubercular matter in the particular locality congested, if the tubercular diathesis be present. The great tendency of persons at the time of puberty to phthisis, is explained by the greater determination of blood to the lungs at that period.

Pulmonary congestion, from suppression of the menstrual discharge, has in the author's experience been a very frequent precursor of tubercle.

The possibility of perfect recovery from phthisis has been assumed by Roger, Boudet, Hughes Bennett,‡ and others, from the frequent presence of fibro-cartilage, with or without calcareous concretions in the summits of the lungs of persons who have died from other diseases. The author remarks that these appearances have often been discovered in persons who have never exhibited symptoms of phthisis, and that they have been shown sometimes to be the result of plastic pneumonia. What our opinion is of the value of the puckered cicatrices in these cases we have already stated (*"Half-Yearly Abstract,"* Vol. I., *loc. cit.*). The author, however,

\* Op. cit., pp. 266-84.

† Half-Yearly Abstract, Vol. I. p. 206.

‡ Gaceta Medica, Avril.



though demurring to the value of the evidence afforded by the fibrinous and cretaceous concretions, does not deny the possibility of recovery even after the formation of a cavity, but in fact details one of the most unquestionable examples of the kind. This fortunate termination is, however, rare. The chances of recovery from tubercular disease increase with the age of the patient.

The concluding chapter of Dr. Blakiston's work on the *treatment of phthisis*, is well worthy of perusal, and to it we must now refer the reader for further details; we have only space for his observations respecting two medicines now much in vogue, viz., *naphtha* and *cod-liver oil*.

Of the former he states, that he has given it in 100 cases with the following results: In half the cases cavities existed in one or both lungs, and in these no permanent benefit was derived; forty-four died, and the remaining six remained with all the signs of advanced phthisis. In the other half of the cases in which the tubercles had not softened, some advantage was found in the improvement of the digestive organs; but the progress of the disease was not arrested in a single case; but comparing those fifty cases with the other fifty in which naphtha was not given, tubercular softening ensued as rapidly in the one case as in the other. (See "Abstract," Vol. II. p. 167.)

Cod-liver oil was tested by the author in a similar manner. Twelve of the incipient cases were decidedly improved. Of the confirmed cases, six were greatly relieved. Of these, four have become strong and fat, and only expectorate mucus; the other two have the disease in a chronic form. All were greatly emaciated when they commenced the oil. In five out of the hundred cases, it was obstinately rejected by the stomach. In eleven it purged. The author remarks further, that subsequently to this he has witnessed very beneficial effects in several other cases. If our readers will compare the above testimony with that which we have recorded in our former volume, they will, we are assured, be favourably impressed as regards the value of cod-liver oil in phthisis pulmonalis.

20. *Diagnosis of Phthisis*.—Pacini has announced that the corpuscles seen in the sputa of phthisical patients, and described by Gruby as pathognomonic of the disease, are nothing more or less than particles of starchy matters derived from the food, and not portions of tubercular matter.\*

21. *Condition of the Gums in Phthisis*.—Dr. Fredericq has announced a brick-red line as a pretty constant appearance in the gums of phthisical patients. This line is most distinct over the incisor teeth. The author states that since his attention has been directed to this circumstance, he has looked for it in other diseases, but has never seen it, excepting in the instance of tubercular phthisis. The truth of this assertion may readily be ascertained.†

22. *Ossification of the Cartilages of the Larynx*.—A memoir has been presented to the Academy of Medicine by M. Segond on this subject, the chief points of which are seen in the following résumé:

1. The epoch of life at which ossification of the laryngeal cartilages commences is variable.

2. When this change takes place, it commences constantly at particular points, which for the most part correspond to the insertions of the laryngeal muscles.

3. Ossification commences in the cricoid cartilages, and terminates with the arytenoid.

4. When the cricoid cartilage is entirely ossified, its form becomes altered, so that the anterior part of the cartilage cannot move under the thyroid cartilage, whence it happens that persons in whom the change has occurred, cannot utter the high notes of the voice.

5. The thyroid cartilage, when ossified, undergoes a notable transformation; the groove which is commonly seen in front of the superior tubercle is obliterated, and the inferior border of the cartilage is thickened, and interferes with the motions of the cricoid.

6. There is a change, independent of ossification, which may embarrass the movements of the cricoid cartilage, viz., a prolongation of the inferior cornu of the thyroid.

7. Two portions of the arytenoid cartilages resist the process of ossification

\* Archives Générales, Août, 1847.

† Revue Médicale, No. 5, 1848.

for a long period; these are the superior internal apophyses. The *corpora triticia*, when ossified, become amalgamated with the great cornu of the thyroid cartilage.\*

23. *Tracheotomy in Croup*.—The propriety, so much disputed, of performing this operation in croup is discussed at some length in Dr. West's admirable lectures, now in the course of publication in the "Medical Gazette." That successful cures have been met with there is no question, but these have been chiefly in France. The reason that it has not succeeded to the same extent in England, Dr. West thinks is to be explained by the fact of the greater frequency of pulmonary complication with us. It must also, he observes, be borne in mind, that in France the operation has been performed in many cases in which it is probable that other treatment would have been successful. One great objection to the operations, as hitherto performed, is acknowledged to be the frequent occurrence of fatal bronchitis, from the direct admission of cold air through the canula; it remains to be seen whether the result would not be more favourable if precautions were taken to ensure a warm moist atmosphere in the room, of not less than 75°.†

### § III.—*Diseases of the Circulatory System.*

A considerable portion of Dr. Blakiston's work, above mentioned, is occupied with some of the more interesting matters connected with disease of the heart and large vessels, including thoracic aneurism, and the progress, termination, diagnosis, and treatment of chronic heart disease. We shall analyse these several chapters as briefly as possible.

24. *Thoracic Aneurism*.—Dr. Blakiston records 26 cases of this interesting lesion, some of which are remarkable for their rarity. Analysis of these and other cases furnishes the author with the following results respecting the *diagnosis* of the affection:

No diagnostic sign was furnished by the pulse, or by the presence of pulsation above the clavicle.

When pulsation was seen and felt over a permanent spot in the chest, it indicated sacculated or mixed aneurism.

Purring thrill was only valuable in conjunction with other signs.

A systolic murmur, heard at a distance from the heart, even though it were not heard in the precordial region, was valuable only as combined with other signs.

A double or diastolic murmur, confined to one spot, at a distance from the precordial region, denoted the existence of a sacculated aneurism.

Aneurism may exist without the slightest trace of pulsation or murmur.

Aneurisms within the pericardium were not indicated during life by any characteristic signs (p. 139).

25. *Treatment of Aneurism*.—Dilated aneurism, as it is called by the author, or aneurism by dilatation of all the coats of the vessel, can only be rationally handled by diminishing the force of the heart's action. We may do this by venesection, but, as the author justly remarks, not without a twofold danger, if carried to any extent, as, in the first place, we increase the irritability of the heart, and cause its beat to be more violent than in health; and, secondly, we run the risk of inducing syncope, from which, with such a state of vessel, the patient might not recover. Digitalis also, in the author's opinion, requires caution in its exhibition; and he prefers poppy and hyoscyamus as more safe remedies.

In the treatment of sacculated aneurism the object is to cause coagulation of the blood in the sac. This may, in some cases, be attempted by venesection; but the author notices that repeated abstraction may also prevent the end in view, by diminishing the coagulability of the blood. For this reason he trusts to sedatives and the application of cold. Purgatives are also indicated to moderate the tendency to plethora (p. 147).

26. *Chronic Heart Disease*.—In order to illustrate the subject of disease of the

\* Archives Générales, Novembre, 1847.

† Medical Gazette, Jan. 21.

heart in its various bearings, Dr. Blakiston divides a large number of well-narrated cases into two categories, according as they were or were not accompanied by obstructions to the general circulation. An examination of those cases shows that the principal alteration in the walls of the heart were hypertrophy, attenuation, and softening. The chief alterations of the valves and orifices were such as to prevent the proper action, to diminish the size of the orifices, or else to weaken them so that the valves could not close them. The effects of these alterations were either obstruction to the current of blood, or the production of regurgitation. The causes of the valvular changes are described as threefold: 1st, atheroma; 2d, inflammatory thickening, vegetations, and adhesions; 3d, simple dilatation of either cavity, ventricle as well as auricle.

The effects of hypertrophy on the health, the author remarks, may be favourable or unfavourable, according to circumstances. Thus a certain amount of hypertrophy is natural as age advances, and the diminished elasticity of the vessels require greater force in the heart's action. So also when it occurs in connexion with obstructive or regurgitant disease of the aorta, it is salutary. Hypertrophy acts unfavourably on the health by retarding venous circulation, when regurgitation through the auriculo-ventricular orifice takes place, or by inducing congestion of the lungs and general arterial capillary system.

The effects of simple attenuation do not appear, from the author's cases, to be readily determined, neither were the effects of softening to be clearly traced.

Lesion of the *aortic* valves alone does not appear to be serious, as death did not result in a single instance in the author's experience. When, however, it exists to any extent, it rarely fails to superinduce other and more dangerous cardiac mischief.

The effects of disease of the *pulmonary* orifice cannot be estimated from their rarity. Disease of the *mitral* valve is far more serious in its consequences. Of the 39 cases reported by the author, 12 died suddenly; and of 27 others which died of pulmonary congestion, those valves were incomplete in 24. Regurgitation through these valves is more serious than obstruction, unless the latter exist to a very marked degree. *Tricuspid* regurgitation to a slight amount is considered by the late Mr. Wilkinson King to be a normal condition, but when in excess it offers a formidable obstruction to the return of the blood from the general venous system, and is thus a potent cause of general dropsy. This is seen in the comparison of 34 cases of dropsy arising from cardiac disease, reported by Bouilland; in 24 of which tricuspid regurgitation existed, and in others it was combined with dilatation of the cavities, so that there were only three cases in which there was not either tricuspid regurgitation or obstruction. The same proportion has also been remarked by Dr. Blakiston in his own cases.

27. *Diagnosis of Chronic Heart Diseases.*—This important subject is treated of in chapter xii. Dr. Blakiston divides the causes of cardiac derangement into *inorganic* and *organic*: the former including, 1, dyspepsia; 2, hysteria; 3, hyperemia, 4, anæmia. Any of these may give rise to palpitations, intermitting pulse, dyspnoea, &c.: and it therefore is of importance as to prognosis to be able to recognise their effects. This, the author observes, may generally be done with facility in the case of dyspepsia and general nervous irritability; but in anæmia a bruit exists, which cannot at once be known from that arising from diseased aortic valves. He states, as a distinction, that it is seldom persistent, and is generally accompanied by the venous murmur; and is always soft and blowing.

If an *organic* cause is decided to exist, it is next to be determined what is the nature of the change or changes. This the author endeavours to ascertain as follows:

If the contractile power of the heart is *increased*, as a constant symptom, it denotes hypertrophy; in which case the precordial dullness will be greater than usual, and the systolic sound will be muffled. If the heart's power is *diminished*, it may arise from attenuation or softening, and possibly from adhesion of the pericardium. In simple dilatation the precordial dullness is increased, and the sounds of the heart become clearer and sharper than natural. When softening exists, the sounds, as well as impulse, are feeble.

Dr. Blakiston considers that there is no sign by which adhesion of the pericardium can be recognised



In seeking a localization of *valvular* derangement, the author states that if there be neither urgent dyspnœa nor signs of general obstruction of the circulation, the aortic orifice may be suspected. If urgent dyspnœa alone be present, we should look to the mitral orifice. If there be signs of obstruction to the general circulation, tricuspid obstruction, with or without disease of the left side, may be suspected.

The author sums up the signs of valvular disease as follows:

**AORTIC ORIFICE**—*Obstruction*. Systolic murmurs traced up the aorta.

*Regurgitation*. Diastolic murmur; visible arterial pulsation.

**MITRAL ORIFICE**—*Obstruction*. Sometimes diastolic murmur at the apex and lower angle of the scapula; without visible arterial pulsation; pulmonary engorgement.

*Regurgitation*. Sometimes, but not often, systolic murmur at the apex; occasionally undulations between the second and third ribs; pulmonary obstruction.

**TRICUSPID ORIFICE**—*Regurgitation*. Seldom any murmur; jugular pulsation; general venous obstruction.

28. We have now, in the last place, to give a short notice of the author's views on the *treatment of chronic heart disease*.

The author first remarks on the well-known frequent origin of chronic disease in attacks of pericarditis, and states his belief, in which we fully concur, that recoveries with a sound organ would be more common if general bleeding were seldom resorted to, and mercurial action more rapidly established than is usually done. He recommends mercurial inunction over the præcordia as a precautionary measure in all cases of acute rheumatism. He also describes two other forms of pericarditis which are often overlooked; the one is that which is apt to follow severe injuries and operations; the other is thus described: "The patient complains of some slight ailment, it may be, of the head, chest, or abdomen, and is treated accordingly; but on the relief of such symptoms the pulse remains sharp and frequent. The sounds of the heart are seldom affected. After a time the pulse falls, and the patient slowly recovers. In four such, after an interval, valvular disease supervened."

29. In the general treatment of cardiac affections the author is guided by the circumstance of the presence or absence of obstruction to the circulation. In the latter case he resorts to leeches and sedatives, especially local anodyne frictions. If pulmonary obstruction is present, he insists strongly on ascertaining the state of the mitral valve. If this does not admit of regurgitation, we are to be cautious in lowering the heart's action. If there be regurgitation, the force of the ventricle is to be slightly diminished, as above mentioned. Bronchial secretions may be solicited by expectorants, as squills with ether and camphor. If the heart's action is feeble, a tonic regimen is called for.

When, in addition, the general circulation is obstructed, the capillaries are to be relieved, by exciting the secretions of the kidneys, bowels, and skin. If digitalis be given as a diuretic, the author advises its combination with ammonia, to guard against its depressing effects.

We here conclude our notice of Dr. Blakiston's volume, and can pronounce it to be the work of an accomplished clinical physician. Although it cannot lay claim to much originality, either in matter or method, it exhibits qualities which readily entitle it to a place beside the recent works of Latham and Crisp, of which we have formerly given some account.

The next communication to be noticed is one by Dr. Barlow; which consists of cases and observations illustrative of the

30. *Etiology of Enlarged Heart*.—Dr. Barlow commences by stating that enlarged or hypertrophied heart may originate in obstruction to the passage of the blood out of the organ, and consequent increased effort on the part of the parietes. This accumulation of blood may arise from two classes of causes:

1st. Obstruction in the orifices of the heart, or in the remoter course of the circulation.

2d. Obstructions from changes in the quantity or quality of the blood itself.

Dilatation may also ensue from two causes, viz.

1st. Increased quantity of blood in the cavities of the heart.

2d. Insufficiency of strength in the walls of the heart to overcome the ordinary distending force.

Consequently, enlargement, or hypertrophy with dilatation, originates in a combination of these causes.

The author, in proceeding to illustrate the manner in which obstruction to the circulation causes enlargement of the portion of the heart situated behind the point, commences with the right side, giving an instance of enlargement of the right auricle and ventricle, consequent upon pulmonary obstruction. The case in question was one of chronic bronchitis with dilated tubes. He alludes also to another condition of the lungs, often seen in young persons, which may induce the same condition of heart, viz., an imperfect development of the lungs, independently of structural lesion. This condition, which is usually associated with small trachea and pulmonary artery, is said to offer a virtual impediment to the circulation.

[It does not appear to have occurred to Dr. Barlow, that in the subjects in whom this congenital defect is observed, there are usually evidences of deficiency in the quantity of blood contained in the general system, and that there is, therefore, something like a balance between the circulating fluid and the pulmonary expansion. Such has been the case in our own experience; and we should, therefore, be little inclined to anticipate the cardiac derangement in question from that cause alone.]

Dr. Barlow has also observed an enlarged right heart from adhesion of the pericardium, before growth is completed.

The next source of the same effects is obstruction of the mitral valve, which acts through the medium of the lungs. Of this complication an instructive case is given. He next proceeds to the orifice of the aorta and its valves, obstructive disease of which, he observes, frequently terminates in sudden death from syncope, and occasionally and indirectly by allowing of pulmonary engorgement.

Disease of this portion of the heart, as well as of the aorta and arteries, which he next considers, produces its first effects upon the left side of the heart, the effect being propagated backwards.

The second class or causes of enlargement of the heart, viz., those arising from change of quality in the blood itself, remains to be noticed.

Simple plethora, or actual increased quantity of blood, is a condition of the existence of which the author is skeptical, but he is fully aware of the agency of impoverished blood, as in Bright's disease, in inducing hypertrophy and dilatation. This fact he explains upon the supposed correctness of the observations of Magendie, that a viscid fluid is propelled through capillary tubes more readily than water. He, however, admits the more probable explanation upon the supposition of the loss of muscular power by the heart from impaired nutrition.

In conclusion, the author enumerates the following circumstances which may damage the heart, viz., long-continued bronchitis—anything which tends to prevent the expansion of the lungs—pericardial adhesion, intemperance, and excessive muscular exertion—disease of the depuratory organs—neglected chlorosis—hemorrhages, and, above all, repeated abstraction of blood.\*

31. *Dissecting Aneurism.*—We give an additional instance of this form of aneurism, reported by Dr. Pirrie. The subject of it was a man, æt. 50, who died suddenly. In the arch of the aorta, about three quarters of an inch to the left of the origin of the left subclavian artery, there was a rent of the inner and middle coats. From this rent to near the origin of the aorta, and for upwards of an inch in the capillary side, the external coat was separated from the middle, around two-thirds of the circumference of the vessel. The aneurism had burst into the pulmonary artery.†

32. *Rupture of the Cordæ Tendinæ on the right side.*—Dr. Bentley Todd narrates an instance of this rare lesion, accompanied by pathological remarks of considerable interest. A man had received a stab in a scuffle, which was followed by pleurisy, necessitating repeated venesection. A month after the injury he vomited blood. When admitted under Dr. Todd, he was anæmic, with general anasarca

\* Guy's Hospital Reports, vol. v. p. 273-285.

† Monthly Journal, Nov. 1847.

and indurated liver, cough, orthopnœa. After death, which resulted from rapid effusion into the pleura, the heart was found to be hypertrophied and dilated, especially on the right side. The valves were healthy, excepting the tricuspid, the anterior portion of which hung loose in the ventricles, the cordæ tendineæ being completely broken across.

In commenting upon the above case, Dr. Todd remarks that the accident was probably due to distension of the ventricle, from an obstacle to egress of the blood, which obstacle was to be found in the state of the lungs during the struggle before mentioned.

The symptoms were progressive, and evidently due to tricuspid regurgitation, and the inevitable series of pathological events which such a condition gives rise to.\*

33. *Cause of "Bruit de Diable."*—Every practitioner is familiar with the humming sound heard in the cervical region in anæmic subjects, but few are induced to reflect on the mechanism of its production. In a recent communication in which the subject is investigated, Dr. Bellingham admits two distinct murmurs attendant on the anæmic condition—one continuous, the other intermittent: the former being venous, the other arterial.

The conditions necessary for the production of murmurs in the circulation are stated to be—

1. A certain degree of roughness in the lining membrane of the vessel.
2. A certain strength or rapidity of the blood-current.
3. A certain degree of density of the blood itself. When the three conditions are simultaneously present, the murmur will be heard in its highest intensity.

In the morbid state in which the "bruit de diable" is heard, Dr. Bellingham observes that the first condition is absent, the lining membrane of the blood-vessels preserving its natural smoothness, but the other two are present, the current being more rapid, and the density of the blood diminished: a greater amount of friction, therefore, takes place, and a murmur is produced in the arteries, of an intermittent character, occurring during the ventricular systole.

In the veins, however, the current being more feeble, some other explanation is required; and it is necessary to resort to mechanical obstruction, to account for the murmur. In the case in question the sound is developed in the jugular vein, as may be readily ascertained. In order that friction, sufficient to develop the sound, should occur, Dr. Bellingham conceives it to be essential that the platysma and cervical fascia should have a certain degree of tension, which can be effected by turning the patient's head, so as to put the side of the neck examined upon the stretch. If a certain degree of pressure be now made by the stethoscope, so as to diminish the calibre of the vessel, a murmur will be developed, and will be continuous, because the venous current is continuous. If the pressure be carried beyond a certain point, so as to disturb the blood-current, the sound ceases. Dr. Bellingham is, therefore, of opinion that there is really no abnormal sound in the vein, but that it is due solely to the pressure exercised by the stethoscope.

[He omits to add that the blood is in a state more readily to be thrown into vibrations. In a healthy subject the murmur cannot be developed by any amount of pressure. There is nothing new in the explanation of the production of the sound by the pressure of the instrument. The novelty in Dr. Bellingham's views consists in the part he assigns to the tensive action of the platysma and cervical fascia, as explanatory of the many anomalies attendant upon the existence of the murmur—such as the variety of intonation, its disappearance one day, and re-appearance the next, &c., all which may, according to him, be ascribed to the accidental degrees of tension to which these structures are submitted by the posture of the patient.

In a discussion to which the enunciation of these views gave rise, Dr. Benson differed from Dr. Bellingham, in not attributing so much to the effect of pressure by the stethoscope. Dr. Byrne mentioned as a practical fact, that anæmic females, in whom this murmur was observed, were not predisposed to phthisis. This view is corroborative of what we had considered as a fanciful theory advanced by Trou-

\* Dublin Quarterly Journal, Feb. 1843.



seau,—that it is unsafe to cure chlorosis, as the chlorotic and tubercular cachexiæ are antagonistic, and by removing the one, we often lead to the induction of the other. Our own experience is directly opposed both to the one and the other statement; we have continually met with the anæmic venous bruit in persons in whom the presence of advanced phthisis was undoubted.]\*

#### § IV.—*Diseases of the Chylopoietic System.*

We have but little to record during the past six months in this section of our Report. The following are the subjects of more particular interest in addition to those given in our extracts:—

34. *Intestinal Obstruction.*—Mr. Phillips read a paper on this subject before the Medico-Chirurgical Society, with the object of elucidating the diagnosis of the cause and seat of obstruction, and also the propriety of resorting to a surgical operation for relief. The author based his observations on 169 cases, of which he stated such particulars as tended to exemplify the varieties of obstruction, and at the same time exhibited the great similarity of the symptoms. After showing the more ordinary symptoms, he inquired whether there were any combination by which particular varieties of obstruction could be recognised. The result of a careful analysis of symptoms and cases went to satisfy the author's mind that no arrangement of symptoms is so definite or constant as to make a diagnosis of the cause of obstruction conclusive. Supposing an operation to be resorted to, it is of course very desirable to ascertain the seat of the affection; and here the difficulties are not less formidable than those which occur in attempts to determine the cause of the obstacle. The history of the case may give assistance in some instances, the existence of a tumour in others, and the distended intestine in a few cases; but in most instances we shall be left in doubt. The author then stated the results of ordinary treatment; and concludes that there are cases in which recourse to surgical operation is justifiable. He showed that the abdominal walls have been cut through in more than fifty cases, for the purpose of affording relief, stating the particulars of many, and the results of all; showing that of those operations, twenty-four appear to have terminated favourably. He showed, further, that some of those operations were undertaken with a view to seek the obstacle and to remove it, but in very few instances has the object been accomplished, the ordinary result being the establishment of artificial anus; and he regarded this as the only practicable result of operation in cases which do not prove fatal.

In the discussion which ensued, Mr. Hilton stated that in the cases which he had seen of impassable obstruction in the upper part of the jejunum, the deficient secretion of urine was a most remarkable feature; and he believed when this symptom was observed in association with a flattened or concave condition of the abdomen, the two in combination might be considered almost pathognomonic of the seat of the obstruction being near the stomach. He would merely take this example as an instance of what he thought might possibly have been ascertained if the contents of the paper had been grouped in reference to the position of the obstructing cause. Mr. Hilton agreed with the author regarding the propriety of the median section of the abdominal parietes, when the operation was deemed necessary, and the exact seat of the obstruction not known; but after opening the abdomen, instead of attempting to trace the distended intestine, with the view of reaching the constricting cause, he would prefer the plan which he had himself adopted, of tracing the empty intestine towards the constriction, and using it to discover the obstructing cause. In some of the cases related in the paper, it was mentioned that large and distending quantities of air had been thrown into the intestines, with the intention of relieving the obstruction. He doubted the propriety of such a proceeding; for he had observed in practice, and as the result of direct experiment upon the intestines in lower animals, that extreme distension causes paralysis of the intestinal muscular fibres. He could fully confirm an observation the author had made, that although the long tube may have been introduced into the rectum to the extent of two feet or more, instead of its having travelled to an equal length along the intestinal canal, it had actually gone but a very short distance, and had then become coiled upon itself.

Dr. Todd disagreed with Mr. Hilton, in considering a flat or concave state of the abdomen a diagnostic mark of the obstruction being situated high up, and related two cases, in which the abdomen was flat and concave, the intestines containing no gas, in both of which instances the obstruction was low down. The conclusion he had come to, in reference to the flaccid state of the abdomen, in cases of obstruction, was this—that if inflammation existed, tympanitis was present, and if it did not exist, the belly was flat or concave. As to the question, whether, in obstinate constipation, we should, or should not, administer purgatives, he was convinced, that after the first day or two we should do away with purgatives altogether; or, if we did use them, we must employ the gentlest and mildest of these agents. He had not seen cases of this kind cured by means directed particularly to the removal of the obstruction, although, in one instance, the obstruction had yielded to the introduction of a moderate quantity of air into the intestines. He did not advocate the use of a large quantity of air in these cases, as such a proceeding was likely to paralyse the intestines.

Dr. Bright remarked that our diagnosis of the situation of the stricture in cases of internal strangulation was but imperfect, but he had observed, in one or two cases in which the obstruction was situated in the small intestines, the peristaltic action of these could be seen more distinctly than when the obstruction was in the colon. There was, however, in most cases, excessive difficulty in arriving at a knowledge of the exact seat of the strangulation. He suggested that the paper might be incorrect in its statistics of the fatality of these cases, as it only appeared to embrace those instances of the disease which might be almost considered hopeless, for it was well known to what a great extent, as to time, obstruction might exist, and yet the patient get well, contrary to the expectation of the practitioner in attendance. He remembered several cases of this kind, in which the operation proposed might have been resorted to, as apparently the last and only remedy. He related one case in which constipation, with vomiting, had existed for six weeks, the abdomen eventually becoming as large as that of a pregnant woman at the ninth month. This patient eventually did well. In these cases all violent means, whether purgatives or others, should be avoided after the first few days, the patient receiving more benefit from mild and gentle remedies.

Remarks of much value were also made by Dr. Copland and Mr. Travers.\*

35. *Gelatiniform Cancer of the Peritoneum, Ovaries, and Lymphatic Glands.*—Dr. Ballard has recorded the annexed case:—A female, who had suffered from menorrhagia and prolapsus uteri, after striking the abdomen found the body began to enlarge, especially in the hypogastric region. She began to vomit a few months previously to her admission at the dispensary. On being visited, she presented the appearance of a person labouring under some severe organic disease, and was considerably emaciated. The abdomen was greatly enlarged, dull on percussion generally, and fluctuating most distinctly; it encroached very much upon the limits of the thoracic cavity. The umbilicus was remarkable in being stretched and flattened out, and not prominent as is customary in ascites. The case was believed to be one of ascites, arising from cancerous disease about the larger divisions of the portal vein, and under part of the liver; fibrous tumour of the uterus was detected, and encysted ovarian disease believed to be likewise present. She was tapped on the 24th, but only a teaspoonful of clear jelly passed from the trocar, and she died on the 26th. On examination of the body, the peritoneal cavity was discovered to be full of a very tenacious and gelatinous matter, emitting a very sickly odour. A large ruptured ovarian cyst, containing a similar matter, occupied the lower part of the abdomen, and there were several smaller cysts about the inlet of the pelvis. The whole peritoneal surface of the abdominal wall and diaphragm was infiltrated with colloid cancer, as also was a considerable part of the peritoneal coat of the liver and spleen. There was a large tumour lying upon the right side, which was formed by the omentum and mesocolic glands converted into colloid; and the mesenteric glands, with those about the under surface of the liver, were similarly affected. This diseased mass was connected below with a fibrous tumour of the uterus. All the gelatinous products, wherever found, presented the characteristic cells of cancer. In commenting upon the case, the author introduced his remarks

\* *Lancet*, Nov. 20.

by observing, that, although colloid cancer of the peritoneum was not of very unfrequent occurrence, he had failed in his search after a case at all approaching it as regards extent, and he had been unable to discover another recorded instance in which colloid matter had been found free within the cavity of the abdomen. He believed that the disease had commenced in the mesocolic glands, from which it had spread upwards over the liver and spleen to the abdominal wall, and downwards to the omentum and ovaria; and that the general effusion of colloid into the peritoneal cavity had taken place subsequently to the rupture of the ovarian cyst from the blow which the patient had received upon the abdomen. These opinions were supported by considerations deduced from the appearances after death, and from the clinical history of the case.\*

36. *Treatment of Ascites by Iodine Injection.*—A case is related in the "Gazette Médicale" (Mars 4), in which a cure was effected by injecting into the peritoneal cavity a weak solution of iodine. The patient, a child æt. 7, had been tapped several times, but the abdomen had always refilled, and he was in all but a hopeless condition when the above plan was resorted to. It was a case of asthenic dropsy, and no disease of the heart or other viscus could be discovered.

#### § V.—Diseases of the Genito-Urinary System.

We have received the fifth edition, revised, of Dr. Prout on "Stomach and Urinary Diseases." Praise would be entirely superfluous respecting a work which the profession has long and unanimously regarded as the standard authority upon the diseases of which it treats: suffice it to say, that the present edition brings each subject up to the knowledge of the day, at least as far as such knowledge can be made available. Much of the minute chemical study which has of late been so prominently brought forward in connexion with urinary maladies is regarded by the author with little favour. We consider that we shall benefit those of our readers who do not possess this admirable work by urging them to lose no time in becoming possessors of it, and masters of its contents.†

37. Two important contributions to the pathology of the kidneys, which we are now called upon to notice, are to be found in the last volume of the "Medico-Chirurgical Transactions." Of these the first is on *subacute nephritis*, by Mr. Simon; the second on the *inflammatory diseases of the kidneys*, by Dr. Johnson.

The first of these essays is made up chiefly of anatomical observations illustrative of the changes induced by subacute inflammation of the kidney, which it will be superfluous here further to allude to, as they will doubtless meet with due consideration in a Report on Pathological Anatomy, by Dr. Day, which it is our intention shortly to publish. There are, however, certain views propounded respecting the disease familiarly known as *morbis Brightii*, which it is our province to notice.

The author calls in question the fact announced by Dr. Bright, that the "mottled" and the "contracted" kidney are different stages of the same lesion, and affirms, on the contrary, that they indicate different pathological actions. The mottled kidney he refers to the fatty degeneration, the "steatosis" of Gluge, and this he believes does not in any case become contracted. The contracted kidney he considers to be one of a series of changes the pathological affinities of which do not point to strumous degeneration as does the other, but to chronic or subacute inflammation as it occurs in certain blood-diseases, in rheumatism, fever, &c. He suggests that the term Bright's disease should be discontinued, and its place be taken either by the term subacute nephritis or scrofulous degeneration, as the case may be, both these forms of the disease being comprehended in the disease to which Dr. Bright has given his name.

The diagnosis of the two forms of disease does not appear to be well laid down by the author, for in fact he trusts entirely to the microscopic evidence of oil-globules entangled with the fibrinous casts common to both, as the only distinctive part of the scrofulous form.

\* Reported in *Lancet*, &c.

† On the Nature and Treatment of Stomach and Urinary Diseases, by William Prout, M.D., F.R.S. Fifth ed., pp. 596.



In reference to treatment, Mr. Simon's injunctions may be thus briefly summed up—local blood-letting, if the general condition of the patient warrants it; the vapour-bath; avoidance of diuretics; careful diet.

38. The essay by Dr. Johnson is occupied with the descriptions of four morbid conditions of the kidney, which he severally describes as—1st, acute desquamative nephritis; 2d, chronic desquamative nephritis; 3d, simple fatty degeneration; 4th, a combination of fatty degeneration with desquamative nephritis.

In all these diseases he remarks, morbid materials are deposited in the urinary tubules, portions of which being washed out are mingled with the urine. The diagnosis which he considers as of great moment, is to be made by the microscope. For a more minute description of the microscopical appearances in each, we refer to the original.

In the treatment of these diseases, Dr. Johnson insists upon two indications—1st, to prevent further development of the products, the excretion of which by the kidney induces serious structural changes; 2d, to relieve the kidney as much as may be by exciting the action of other elementary organs, as the skin and bowels.\*

39. *Alkaline Urine*.—Dr. Rees points out that urine which is secreted normally acid may become alkaline during its transmission through the urinary passages (independently of delay in the bladder), and that such cases are benefited by alkaline medicines. He narrates a case in illustration.†

We may here call the attention of our readers to a series of papers now publishing by Dr. Gairdner, on the pathology of the kidney. We defer our notice of them till they are complete.‡

#### § VI.—Diseases of the Skin.

40. We have to notice two works by Mr. Erasmus Wilson in this department, both of which have appeared since our last Report. Of the first of these, "*Portraits of Diseases of the Skin*," two fasciculi of which are published, it is impossible to speak too highly. As a work of art, the "*Portraits*" have not only never been surpassed, but have not even been approached by any previous delineations of skin disease. The plates are most beautifully coloured, and are as correct as beautiful.

The other work to which we have alluded, is a brochure entitled "*Ringworm, its Causes, Pathology and Treatment*." The term "*Ringworm*," observes Mr. Wilson, ought to be restricted to diseases which cause the hair to fall from brittleness, and with this restriction the term is accordingly used by him; under this denomination therefore two diseases only are arranged, viz., true favus and scurfy ringworm (*Porrigo scutulata*, Wilson) which he calls "*Trichonosis furfuracea*." To each of these the author devotes a chapter, embracing a minute description of its characters, analogies, causes, and treatment. The most startling announcement contained in the volume is, that these diseases are not contagious—an assertion with which Mr. Wilson will scarcely find many to agree, especially after the direct evidence to the contrary which Dr. Hughes Bennett has afforded by means of inoculation. It is true that several other attempts, made by the same writer and by others, have failed, but it must be remembered that one well-ascertained positive fact is worth any amount of negative ones. Mr. Wilson also disputes the vegetable origin of favus as is maintained by Gruby and Dr. Bennett, but he admits in a foot-note that he has not had time to investigate the researches of these writers, and it is not improbable, therefore, that future inquiries may induce him to modify his opinion.

Mr. Wilson's observations on the treatment of these usually intractable complaints will well repay perusal.

41. *Danger of Repressing Skin Diseases*.—Several instances have occurred in the practice of M. Devergie, illustrative of the danger which may arise from the repression of chronic skin diseases. The narrator of the cases sums up as follows:—1. The functional disturbances of the internal organs occur simultaneously with the subsidence of the skin disease. 2. The severity of the symptoms is proper-

\* *Medico-Chirurgical Transactions*, vol. 30, p. 188.

† *Med. Gazette*, Ap. 7.

‡ *Monthly Journal*, April, May, &c.

tionate to the extent and severity of the skin disease. 3. The symptoms cease on the return of the cutaneous irritation. 4. Death may occur more rapidly than from similar internal disease produced by other causes. 5. If the internal disease be healed antiphlogistically, death is precipitated, and a fatal result always ensues if the eruption cannot be restored or an artificial one excited.\*

[A case, which made a deep impression, occurred to the writer of this Report a few years back. It was that of a man labouring under extensive psoriasis, but in other respects in perfect health. He was put upon an arsenical course, when in a few days the eruption had almost disappeared, but at the same time he complained of dyspnœa, and died with the symptoms of pleurisy in 48 hours. On examination, the right pleura was filled with sero-purulent effusion. This was distinctly an instance of internal inflammation of a low type, excited by the repercussion of the cutaneous malady, and is calculated to enforce caution in the treatment of old-standing skin affections.]

42. *Elephantiasis*.—[Instances of this curious disease are so rare in this country, that we do not hesitate to insert the following, reported by Mr. Southam, which might, moreover, claim to be considered as remarkable even had it occurred in a tropical climate.]

The patient was a female. The disease had existed twenty years, commencing when she was eighteen years of age. It began on the dorsum of the foot, and was preceded by pain and fever. After œdema appeared it became permanent and slowly extended up the leg. The patient was little inconvenienced for the first eight years, excepting by the bulk of the limb; but as the swelling approached the thigh the pain became more severe, especially in the thigh, and the integuments were the seat of frequent erysipelatous attacks which were attended with a discharge of clear watery fluid. A few years ago a large ulcer formed on the inside of the thigh, and recently three others made their appearance near the ankle. Although these discharged abundantly, there was no diminution in the limb. The measurement round the calf of the leg was 2 feet 9 inches, above the knee 3 feet 4 inches, and at the upper part of the thigh 5 feet 6 inches. The limb had a lobulated form.

The general health of the patient did not suffer in the first instance. Her death occurred from an attack of dysentery.

An examination of the limb was instituted, and the enlargement was found to have been caused by the deposit of a lardaceous matter interspersed with fat into the subcutaneous cellular tissue. The muscles were small but of natural appearance. The principal venous trunks were much larger than usual, distended like injected arteries, and were patulous when divided. Their external coat was thickened, and, except in a few places, the middle and internal ones could not be traced, both being apparently converted into a thick fibrous tissue, disposed round the vessel in laminæ, not unlike the contents of an aneurism. The outer ones were of a firm texture, and pale brown colour. Those near the centre were soft and spongy. The same appearance existed in the smaller veins, some of which were completely impervious. The saphena was converted into a thick fibrous cord. The arteries were small and their coats thin.†

[The author regards the pathology of elephantiasis to consist in inflammation of the capillary veins; and considers that the disease bears an intimate relation to phlegmasia dolens, and the scleroma of infants, the apparent differences depending on the different degrees of venous obstruction.]

43. *Molluscum Contagiosum*.—Dr. Cotton gives an account of a family, consisting of father, mother, and six children. The disease first showed itself four months back, upon the arms and hands of the eldest girl, æt. 14 years, subsequently in the youngest, an infant, æt. 6 months, after three months in another daughter, and on the arms and chest of the mother—the father, two sons, and one daughter remaining free.

In every case it began in the form of round movable tumours, of the size of a pin's head, gradually increasing to that of a pea, and presenting a central depression like that of small-pox. These small tumours were nearly covered with

\* Gaz. de Hôpitaux, No. 110.

† Med-Chir. Trans., Vol. xxx.

epidermis, and were red and shining, but soon became thick and wart-like from induration of the cuticle.

In this disease the surrounding skin is always free from irritation; the tumours are arranged in groups of two to six, which never coalesce, and they are occasionally pedunculated. During their early stage, an opaque white or cheesy-looking matter exudes from the central point on pressure; but as the disease advances, the contents of the tumour become hard and lobulated. This substance is composed of two distinct elements with an intermixture of epithelium and granules. The stromal substance consists of irregularly-waved fibrils, crossing each other in all directions; the intra-stromal is formed of spherical or elliptical cells more or less granular, but devoid of nuclei.

The small central depression, evidently formed by the closed opening of a duct, the lobulated form of their contents, and the absence of the tumours in those parts which are without sebaceous glands, clearly indicate these organs as the seat of the disease; but the difference between the contents and inspissated sebaceous matter, shows that molluscum is not produced by mere retained sebaceous secretion. The disease, as observed by Dr. Cotton, appeared to have two modes of termination, either the secretion escapes before it becomes hard and the tumour consequently disappears, or it is retained, and, becoming indurated, gives rise to a permanent wart.

As the general health of all the patients was good, the author's treatment consisted in removing the tumours and checking the tendency to their production by frequent friction of the body with a rough towel. In their early stage, nitrate of silver was found sufficient; but when in advanced stages, the author removed them by knife or ligature, or pressed out their contents and cauterized afterwards with nitrate of silver. The last plan he thinks succeeded the best.\*

## PART III.—MATERIA MEDICA AND THERAPEUTICS.

### SECT. I.—MATERIA MEDICA.

#### § I.—*Medicines derived from the Mineral Kingdom.*

44. *Persesquintrate of Iron.*—In 1832 Mr. Kerr pointed out the power of this medicine in chronic diarrhœa, and he is now led to call attention to it again as a remedy for Asiatic cholera. He states that an experience of eighteen years has confirmed his views of its great value. It is not, however, serviceable where ulceration of the bowels is present, and is therefore inapplicable in the diarrhœa of phthisis. He has also lately given this medicine with advantage in urticaria, and narrates a case which yielded speedily to it after resisting other remedies. It is also potent in allaying hiccup.

The formula which Mr. Kerr prefers for its manufacture is

Iron wire (No. 17), one ounce.  
Nitric acid, three fluid ounces.  
Water, fifty-seven ounces.  
Muriatic acid, one drachm.

Mix the nitric acid with fifteen ounces of water, in an earthenware vessel capable of holding three or four times the quantity. Put into this the iron wire broken into a number of pieces; cover the vessel lightly. In eight or twelve hours the solution to be poured off, and the remainder of the water, with the muriatic acid, is to be added.

When properly prepared, this solution is the colour of dark brandy.†

45. *Tartrate of Potash and Iron.*—M. Mialhe states, that though this preparation contains above 30 per cent. of the peroxide of iron, its ferruginous flavour is so slight that it will be tolerated by stomachs which resist other martial preparations

\* Edinburgh Med. and Surg. Journ., Jan. 1848.

† Monthly Journal, May 1848.



It has also the advantage of not constipating the bowels.\* [We are in the constant habit of using this preparation in effervescence with carbonate of soda and tartaric acid, and can confirm the above remarks.]

46. *Iodide of Potassium, injurious effects of.*—M. Rodet has contributed a series of papers to the "*Gazette Médicale*," setting forth the ill consequences which follow the injudicious use of this valuable medicine, and the means of preventing them. We take the following remarks from a translation in the "*British and Foreign Medico-Chirurgical Review*."† The author adduces several propositions thus:

1st. In the physiological condition the iodide exerts its action on certain organs, and when this action becomes pathogenetic, it is exerted upon one of these organs, or any organ which is already suffering irritation.

2d. The iodide will rarely, if ever, produce serious effects, if given only in cases which evidently require it.

3d. It is, in general, not well borne in cases in which mercury is indicated.

4th. The iodide acts the more favourably if the patient has not been treated by other measures. The author considers it a mischievous error to suppose that the iodide of potassium is an antidote to the mercurial cachexia.

*Prevention.* The author's precepts are, 1st, the medicine should never be given, except in cases where it is absolutely required. With the exception of syphilis, it is only efficacious in scrofulous diseases, and in glandular and other engorgements. In syphilis, M. Rodet advises that it should never be given in the primary or secondary symptoms, and always to employ it in the tertiary symptoms at first, and afterwards to associate mercury with it, if necessary, rather than increase the dose. [M. Rodet limits the advantages of this medicine too closely. Its power in chronic rheumatism, and its advantages as an auxiliary diuretic, are undoubted.]

2d. Iodide must be employed with the more circumspection in proportion to the quantity of mercury which has been previously taken.

3d. Whenever the disease for which iodine is given is complicated with inflammatory action of any organ, this should be subdued before the medicine is exhibited.

4th. The iodide should never be given in larger doses than is strictly necessary. [This strikes us as the most important caution of the whole. The medicine is too frequently given in excess in this country as well as abroad; and this it is that causes it to fall into discredit.]

## § II.—*Medicines derived from the Vegetable Kingdom.*

47. *New Vehicle for holding Camphor in Solution.*—Sir James Murray proposes a new vehicle for holding camphor in solution, which may be exhibited in doses considerably greater, and with less irritation, than it has hitherto been given. It was known that camphor is insoluble in water, and that when given in almond emulsion it very readily separates on the addition of water, and that the same separation takes place on adding water to a solution of camphor in spirits of wine. The opinions respecting the effect of camphor are various. Some describe it as a stimulant, and some as a sedative; but this difference of effect depends mainly on the quantity given. Now, Sir James Murray has found that the fluid magnesia was capable of dissolving camphor to the extent of three grains to the ounce of the solution, and that adding water to the mixture did not cause any cloudiness or separation of the camphor. An ounce of this solution contains three grains of camphor, which appears perfectly clear, like water; and if anything is added to the solution capable of withdrawing a portion of the water, such as dry common salt, a rough estimate may be formed of the quantity of camphor which it contains. To employ camphor as a sedative, it must be given in large doses; but it is also necessary to have it perfectly dissolved, for when free it acts as a powerful stimulant. It is obvious, then, that given for this purpose it would not do to employ the camphorated spirit, nor will the solution in emulsion be any better, as it readily separates from it in the stomach. We have, therefore, he observes, a

\* *Union Médicale*, No. 2, 1848.

† April 1848.

menstruum in the fluid magnesia, which answers better than any method hitherto known.\*

48. *Lycopus Europæus*.—This plant is recommended as a substitute for quinine. It is given either as a watery or as an alcoholic extract. Its active principle is termed lycopine.†

49. *Santonine*.—M. Taccinei suggests that this medicine should not be given in combination with a purgative, when our object is to destroy intestinal worms. It should be allowed to remain some time in the intestines before a purgative is exhibited; by which means the destruction of the parasites is more surely accomplished.‡

50. *Adansonia Digitata*.—This is another substitute for quinine, introduced by M. Duchassaing. Numerous trials justify him in affirming that the powdered bark possesses strong febrifuge powers, and has an agreeable taste. It is said to have succeeded when bark had failed. Dose: One ounce of decoction.§

51. *Asparagine*.—This is the active principle of asparagus, and is suggested as advantageous in heart diseases. Its effects are sedative.||

52. *Quinine, Poisonous Effects of*.—Our readers, by referring to Vol. III, Arts. 2 and 3, will see that quinine is given in Florida, and other miasmatic portions of the new world, in very large doses; and it is maintained that no ill consequences are to be observed. The contrary is, however, maintained by Dr. Baldwin, who shows that this practice is really attended with danger, and states, in one instance which came under his own eye, a much smaller dose occasioned death. Children present greatly less tolerance of the remedy than adults. In the fatal case, eight grains given in two doses, with an interval of three hours between each dose, to a child of six years, brought on dilatation of the pupils, extreme restlessness, convulsions, blindness, and death. In another case reported by Dr. Baldwin, sixty-eight grains introduced into the system in the course of twenty-four hours, induced the train of symptoms characteristic of the poisonous action of this drug, viz., tremors, slow and irregular breathing, restlessness, dilatation of the pupils, blindness, and convulsions.

Several authors (Mérat and de Lens, Duval and Trousseau) mention cases in which serious effects have ensued from the immoderate use of quinine. Melier (Mém. de l'Acad. de Méd., tom. ix) says that the following effects have been distinctly observed to result from large doses of quinine in man: delirium and coma, pneumonic symptoms, hematuria, amaurosis, deafness, convulsions, paralysis, and death.

Startled by the serious results occasioned by the use of quinine in the cases above noted, Dr. Baldwin commenced a series of experiments on animals, with the view of determining its poisonous action. He found that the symptoms developed in animals by poisonous doses of quinine, were general restlessness, speedily followed by "muscular agitation, or tremulous movements of the body and extremities, with a constant motion of the head resembling somewhat paralysis agitans. When under the full operation of the poison, the power of locomotion, and even of standing in the erect position, was altogether lost, and the extremities apparently paralysed." Great excitement of the vascular system is said to have been present, the pulse rising to 110, and in some to 240 beats in the minute, accompanied with great oppression of breathing and frothing at the mouth. The pupils were much dilated, and, as far as could be judged, vision was entirely lost—convulsions were observed in every case but one. "In a few instances, the subject seemed as if stunned by some sudden blow, or a violent fit of apoplexy; the latter effect was only observed when it was given to young dogs by the jugular vein or peritoneum." Purging was present in some cases; and when the medicine was given by the stomach, vomiting invariably ensued, unless the œsophagus was tied.

The time required to produce death varied greatly; in some instances 15 to 20 grains proved fatal in a short period; while in other animals, on administration of 120 grains, death occurred only after a long period; peculiar idiosyncrasies, as in the human subject, appearing to favour or retard its action as a poison. The

\* Dublin Medical Press, Dec. 15, 1847.

† Ibid.

§ Ibid., March 1848.

† Gazette Médicale, No. 6, 1848.

|| Revue Méd. Chir., Jan. 1848.

quinine was in some cases introduced into the stomach, in others injected into the peritoneum and into the jugular vein. Its effects were equally exhibited by each mode of administration, but not with more certainty or force when given in one way than in another. The chief post-mortem appearances were "a dark, fluid, and defibrinated condition of the blood," a congested state of the lungs, and a "vascular and highly-injected state of the stomach and bowels," and congestion of the vessels of the brain.

The results obtained in Dr. Baldwin's experiments coincide with those obtained by others.—(Melier, *Mém. de l'Acad. de Méd.*, tom x. Giacomini *Dict. de Med.*, vol. xxvi.)\*

53. *Muriate of Opium*.—Dr. Nichol recommends this as the best preparation of opium, never inducing headache.

It is made as follows:

Take of the best powdered opium,  $\mathfrak{zj}$ .

Muriatic acid,  $\mathfrak{zj}$ .

Distilled water,  $\mathfrak{zxx}$ . Mix.

Shake this mixture very frequently every day, during fourteen days, then strain and filter. The dose is from twenty to forty drops, according to circumstances. Many of my medical friends have tried this preparation, and they highly approve of it.

## SECT. II.—THERAPEUTICS.

54. *Anæsthetic Agents*.—Whatever sensation may have been excited by the occurrence of fatal cases from the inhalation both of ether and chloroform, it must be acknowledged by those who do not wilfully shut their eyes to the onward progress of medical science, as well as to the claims of humanity, that the exhibition of these agents for the amelioration of physical pain, will henceforth form an integral portion of our therapeutical resources. There perhaps has never been an instance in the history of invention, of a discovery having in so short a time taken so great a hold on the public mind, or having been so thoroughly and extensively investigated. Such, indeed, has been the avidity with which these agents have been used, and so great the readiness in giving to the world the results of individual experience, that our task of reporting upon the mass of papers lying before us, from all parts of the globe, appears insurmountable; and we might reasonably pause on the threshold of our analytical endeavours, were it incumbent upon us to notice *all* the communications which have been forwarded to us, or extracted from various journals. This, however, is as unnecessary as unprofitable; and we shall consider that we have done all that our readers will expect of us, in giving a brief analysis of the more important. In this Report it is our intention only to allude to anæsthetic agents in their general therapeutical capacities. Their special applications in surgery and midwifery will be given in our Reports on these subjects respectively.

55. *ETHER*.—We have given so detailed an account of the anæsthetic properties of ether in a former Report, that we shall not here begin *ab initio*. It had, indeed, become at one time a question whether this agent would not be entirely superseded by chloroform; such, however, was not found to be the case, as there are several writers who even now prefer ether under *all* circumstances to chloroform, and there is a still larger number who hold that it is preferable under *certain* circumstances.

56. *Fatal Case from Ether Inhalation*.—In our former Report we expressed the opinion that the cases then adduced as fatal from the influence of ether vapour were far from satisfactory, as establishing that point; but in the following case, which occurred in the Hôtel Dieu, it is more probable that death was really to be attributed to the vapour, as there was nothing in the nature of the operation itself, or the patient's previous condition, to account for the fatal result.

On the 10th of July, a man æt. 55, of robust constitution, was etherised for the removal of a tumour. After inhaling two or three minutes, considerable agitation was observed in the face and limbs; during five minutes more the inhalation was continued, and complete insensibility induced. The first incision was per-

\* *Southern Med. and Surg. Journal, and Monthly Journal, May 1848.*



formed, when the dark colour of the patient's countenance attracted the operator's attention, and the man almost immediately expired. On dissection, the viscera exhaled a powerful odour of ether, the blood was viscid, and the lungs were deeply congested.\*

57. *General Effects of Ether.*—Mr. Wells has published the results of the inhalation of ether in one hundred and six cases, including various operations. He states that no serious ill effects followed in any case. In only one was uneasiness excited; this was a little girl, who, although not more than a minute under the influence, suffered from vomiting and fainting for nearly an hour, and remained for eight hours in a state of complete intoxication. The operation being only that for the cure of strabismus, could not have induced any such condition. In three delicate women, hysteric laughing and crying followed, but never lasted more than a few minutes. One young lady appeared to be in a profound sleep for four hours, but on recovery said she had been quite sensible of everything that had occurred during all this time, although she was quite incapable of either speaking or moving. In no male was any ill effect observed. The wounds in every case presented a healthy appearance, and the processes of granulation and cicatrization were apparently in no way affected by the etherization of the patient. In nine cases the inhalation was discontinued on account of suffocative feelings or convulsive motions of the patient; in fifty-two the patients either cried, started, or moaned during the operation, but, on recovery, said they had felt no pain, although, in fourteen instances they were conscious of what was being done; in forty-five the success was complete, the patients giving no sign of sensibility during the operation, and on recovery appearing quite ignorant that anything had been done. The sensations described by different persons were extremely various; generally there was some heat in the mouth and difficulty of breathing, followed by vertigo and conscious loss of muscular power preceding insensibility. By some, pleasant dreams, indescribable but delightful sensations, rapid flights through the air, gorgeous visions, and unearthly music, were described in glowing language; by a few others, a sense of great oppression, resembling nightmare, was complained of; in many others, as total a temporary suspension of all the mental faculties and cerebral functions had taken place, as in the most profound sleep, nothing being remembered after the first few inhalations until the period of returning consciousness. In those cases where flushing of the face, turgescence of the neck, or convulsive motions, led to a discontinuance of the inhalation, nothing more than difficulty of breathing was complained of.†

58. *CHLOROFORM.*—This anæsthetic has now been so extensively employed that we are warranted in coming to some definite conclusions respecting its merits. That it is a more powerful agent than ether cannot be questioned, as the insensibility which it occasions is more profound, and produced with greater rapidity. For this reason, however gratifying it is to be in the possession of such a resource, it cannot be denied that in inexperienced hands it is less safe than ether, and in all cases requires to be exhibited with more caution. One of its properties, which every one who uses it should be well acquainted with, is its tendency to cumulative action, that is to say, the insensibility produced by it will often become more and more profound after the cessation of the inhalation. We have known sleep to be induced some minutes after the inhaling had been suspended, the patient at the time of taking the sponge away being perfectly conscious. This property is alluded to by Dr. Snow (*Lancet*, Feb. 12), and also by M. Sedillot.

It would appear, from the tenor of several communications, that a great difference exists in the different samples of chloroform which have been submitted to the public. It is only in this way that we can explain the great variety of effects which have been met with. As it is of importance that an agent so powerful should be prepared with as near an approach to uniformity as possible, we shall give the most recent formula for its preparation.

59. *Preparation.*—M. Soubeiran recommends a mixture of ten parts of chloride of lime and 60 parts of water. This is to be introduced into a copper alembic, which it should only two-thirds fill. Two parts of alcohol are then to be added, and distillation commenced. At the period when the heat has risen to 170°, a

\* *Journ. des Connais. Méd.-Chirurg.*

† *Med. Gaz.*, Sept. 1847.

difficulty occurs from a tendency to boil over; at this time the fire must be reduced, when the distillation will proceed tranquilly. To obtain the chloroform, the upper and lighter fluid is decanted, and the lower stratum is washed with carbonate of soda, and afterwards rectified on chloride of calcium. M. Soubeiran does not consider a redistillation with sulphuric acid to be necessary.\*

Of several samples which we have had an opportunity of testing, the most pure appeared to be some which was forwarded to us by Duncan and Floekhart, of Edinburgh, prepared under the superintendence of the discoverer, Professor Simpson. This was a perfect clear and limpid fluid, free from the straw-coloured tinge which we have observed many specimens to possess.

60. *Physiological Effects*.—Experiments with chloroform have been recorded by the Medico-Chirurgical Society of Edinburgh, and by Mr. Wakley, Jun.: the latter consisting of a series of 100 observations on various animals. From the result of these it would appear that there is no material difference in the gradation of effects produced between chloroform and ether, the action of each being distinguished by several stages, indicating its successive operation upon the different divisions of the nervous system. Dr. Snow† considers that these different degrees of variation depend upon the different preparations of vapour dissolved in the blood at the time. For producing the second degree of insensibility, in which there were loss of consciousness and impairment of voluntary motion,  $\frac{1}{50}$ th part of what the blood would dissolve was found sufficient; for producing the fourth degree, when all voluntary power is abolished,  $\frac{1}{8}$ th was required. The experiments for determining these points consisted in ascertaining the smallest quantity of vapour, in proportion to the air, which would suffice to induce a given effect, and were performed in the following manner:—A small quantity of the liquid to be examined was weighed, and put into a very large glass jar, carefully closed, and when the vapour was equally diffused, a small animal (generally a bird, or a mouse) was introduced, which was allowed to remain for some time after the effects of the vapour had ceased to increase. At the point at which the effects became stationary, the tension of the vapour in the blood balanced the tension of that in the air in the lungs, at the temperature of the body, which being already known, the quantity in the blood could be calculated. The results obtained agreed with experience as to those vapours which had been administered to patients. Chloroform required about 288 parts of serum of the blood to dissolve it; and taking M. Valentin's calculation, that the human body contains, on an average, about twenty-six pounds of serum, it was found that twenty-four minims was the twenty-eighth part of the quantity the blood would take up—the quantity, consequently, for producing complete insensibility. When allowance was made for the vapour, which reached no further than the trachea, and was, therefore, not absorbed—this agreed with experience. The quantity of ether required was found by calculation to be considerably larger, on account of its much greater solubility; and these experiments showed the cause of the rule he had stated on another occasion, that the more soluble a volatile substance was, the greater was the quantity required to produce a given effect; and that, consequently, when the volatility was taken into the account, the strength of this class of substances was in the inverse ratio of their solubility. He considered that the vapour of these substances did not become decomposed, or enter into any chemical combinations in the body, but produced its effect by its mere presence, impeding those combinations between the oxygen in the arterial blood, and the nervous tissues, on which the functions of the nervous system depend.‡

61. *Influence of Chloroform on the Blood*.—From experiments on dogs, Mr. Gruby has ascertained:

1st. The arterial blood is more red (at least, as red) where chloroform has been inhaled, than (or as) where it has not.

2d. The venous blood becomes of a clear red colour under the use of chloroform, losing its usual reddish-black tint.

3d. Venous blood in an animal under the influence of chloroform is more red

\* *Journal de Pharmacie*, Dec. 1847; and *Lancet*, Jan. 1848.

† *Lancet*, May 13, 1848.

‡ *Ibid*.

than non-chloroformized arterial blood, and nearly as scarlet as such blood when penetrated by chloroform.

Hence it would appear that chloroform, far from rendering the hue of arterial blood venous, augments the intensity of its red colour; and, more than this, that it imparts the arterial colour to venous blood.

In his experiments, M. Gruby was careful to use an instrument which allowed a due supply of atmospheric air to mix with the vapour of chloroform in inhalation; and to the omission of this precaution he would, in a great measure, attribute the different results which have been obtained by others.\*

62. *Effects of Chloroform and Ether on Animal Temperature.*—MM. Dumeril and Demarquay have communicated to the Academy of Sciences a series of experimental researches on the modifications of animal temperature produced by ether and chloroform, and on the physiological action of those agents.

They state that the temperature is peculiarly lowered in animals submitted to the influence of the vapour of those intoxicating agents; that this depression is greater from ether. This effect is constant, whether the vapour be introduced into the respiratory passages, or into the rectum. Section of the pneumogastric nerves, almost simultaneously with the application of the inhaler to the mouth, does not modify the results obtained when those nerves are uninjured. The temperature is depressed also during reaction, consequent on the section of one of the pneumogastric nerves, twenty-four or forty-eight hours before inhalation. The authors further believe that these facts warrant the conclusions, that ether does not act primarily in the manner of an asphyxiating agent, but that the asphyxia induced is but a secondary effect following the penetration of its vapour into the economy; that the phenomena of etherization set out from the disorder they induce in the central nervous system; that the asphyxia is but consecutive, and if fatal, it is because etherization has lasted so long as to abolish the functions of the medulla oblongata, the last part of the nervous centres acted upon by the agent.

They further state that a loss of sensation, together with a depression of temperature, is brought about also by brandy; but that narcotics, instead of lowering animal heat, raise it, save for a very brief period, immediately after their ingestion.

The injection of ether-vapour into the rectum shows that, apart from the disorder of the respiratory function, there is a depression of temperature, which must arise from a special action of the nervous system. If, then, the source of animal heat be in the process of blood-making, and the latter be immediately dependent on the nervous system, the possibility of a modification of temperature by any cause acting primarily upon the system, is at once seen.

As a further result of their experiments, MM. Dumeril and Demarquay state that the action of ether and of chloroform is rapidly fatal, since they have seen it destroy dogs in thirty-five or forty-five minutes, and even in less time, with reference to chloroform.

63. *Pathological Effects.*—The physiological action of chloroform and its pathological action, may be regarded as differing only in degree. When carried beyond a certain point in all individuals it is capable of producing death, and short of this convulsion, and a depth of insensibility, which may be considered as a pathological condition. There are, however, certain persons who appear peculiarly susceptible of its agency, and in them unpleasant if not dangerous symptoms are induced when least expected. Many such instances, which it is unnecessary to particularize, have been placed on record; the unpleasant effects being chiefly *vomiting*, especially when inhalation follows soon upon a meal; *headache* persisting for several hours; *hysteric* or *tetanic* convulsion; and formidable *depression* of the heart's action.†

64. *Fatal Cases from Chloroform.*—That chloroform will destroy life is well known from the experiments of Mr. Wakley and Dr. Glover on the lower animals; but it is satisfactory to know that as yet there have been only three, or at the most four, cases in which death in the human subject has been attributed to this agent. The first instance, which excited great attention at the time, and occurred in the

\* Bulletin des Académies.

† Vide Paper by Dr. Nevins, Med. Gaz., March 3d; by Mr. Stewart and Dr. Gull, ib.



practice of Mr. Meggison, a surgeon at Newcastle, is given below in this gentleman's own words.

"I much regret that the melancholy duty of communicating what I believe to be the first fatal case of the administration of chloroform should devolve upon me; but I consider I should not be doing my duty to the profession generally did I not make public this case. The patient, a fine-grown girl of fifteen, had been suffering for some time past from onychia of the left great toe, the matrix appearing involved extensively. After consulting with Mr. Lloyd, my assistant, we deemed it absolutely necessary that the nail and matrix should be completely removed. I ought to say that, about a year previously, the nail of the great toe had been removed at the Newcastle Infirmary; but, the matrix having been left, the disease had spread, and induced necrosis of the distal phalanges of the toe, rendering amputation necessary, the propriety of which we merely urged, thinking to do it after the operation had been performed on the other foot.

"During the previous operation she was under the influence of ether, and said she felt no pain nor inconvenience from it except a severe headache afterwards, and great uneasiness during the inhalation, from irritation of the fæces. We assured her she would feel none of that irritation from the use of chloroform, and that in the cases in which I had used it, the headache, if any, had been transient. The whole of the day previous to the operation she had been fretting much, and apparently dreading it, crying continually, and wishing she were dead rather than submit to it. In this state we found her on Friday last, at noon, when we went to perform the operation. We endeavoured to console her, and calm her fears, assuring her that she would not feel it, and urging her to be more collected; but in vain. She sat down in the chair sobbing. I poured a teaspoonful of chloroform on a handkerchief, and, on applying it, she drew her breath twice, and pulled my hand down. I asked her to put her hands on her knees, which she did, and breathed quietly for about half a minute, when, no stertorous breathing or change of appearance supervening, I lifted her hand, and, finding it rigid, requested Mr. Lloyd to remove the nail and matrix. This was dexterously done with one sweep, at the termination of which she kicked out, and I, thinking the chloroform not sufficiently potent, was proceeding to apply more to the handkerchief, when her lips, which had been previously of a good colour, became suddenly blanched, and she spluttered slightly at the mouth as one in epilepsy. I threw down the handkerchief, and gave her cold water immediately, followed by brandy. This, however, had not the least effect, not the slightest attempt at rallying being made, and in a minute more she ceased to breathe. A vein in the arm was opened, as also the jugular, but no blood would flow. The whole process of inhalation, operation, bleeding and death, could not, I should say, have occupied two minutes."

The body was examined after death, and it was found that the lungs exhibited the greatest amount of pathological change, being congested to a degree very unusually met with.

This unfortunate case, as might be expected, has excited very considerable discussion; the opponents of chloroform making the most of it to deter the public from submitting to its agency; its advocates seeking to establish some other explanation of the fatal event than that arising out of the direct action of chloroform.

Foremost among the latter is Professor Simpson, who endeavours to prove that the girl did not die from the effects of chloroform, but was in fact asphyxiated by the means adopted for her restoration. With this object, Dr. Simpson points out, in the first place, the small dose employed, and the fact, that at the time of the operation, and immediately after it, the girl was not in a state of very deep anaesthesia, as she kicked and moaned, and her breathing and pulse were unaffected. While still torpid and lethargic, however, and perhaps in a state of fainting after the operation, the surgeon, unfortunately, filled the patient's throat and mouth with water and brandy, with the intention of reviving her. But this fluid she was incapable of swallowing in her partially faint and anaesthetic state. Consequently, at the first returning attempt at inspiration, a quantity of the fluid entered the throat, and the patient was instantly and fatally suffocated. She was choked or asphyxiated by her respiration being prevented by the layer of fluid placed over the top of the windpipe; and to produce this suffocating or drowning effect in her then torpid state, it mattered not whether the layer of fluid were ten lines or ten fathoms

in depth—whether it merely covered and submerged the opening of her windpipe, or covered and submerged her whole body. She was directly asphyxiated or drowned, by a *sufficient* quantity of liquid being placed for this effect over and around the entrance of the larynx.

Dr. Simpson then remarked, that the appearances observed after death in the congested lungs, trachea, epiglottis, &c. &c., of the Newcastle patient, were, one and all of them, precisely those observed after choking or drowning (which he showed by referring, in detail, to the published observations of Dr. Copland, Carpenter, &c., on these points): while they were quite different in some essential particulars, from those observed in the bodies of various animals killed intentionally by chloroform-inhalation, by a committee of the Medico-Chirurgical Society of Edinburgh. Thus, for instance, in the Newcastle patient, the blood was found after death fluid in the heart (as it is in all rapid cases of simple asphyxia and drowning); while the Edinburgh committee found the blood firmly coagulated in the heart in every animal which was made to inhale chloroform to a fatal degree.

The Professor next pointed out that death would inevitably occur to any person in deep apoplexy, narcotism, &c., if during these lethargic states the mouth in the same way were filled with liquid, so as to prevent the entrance of air, and the power of swallowing were at the same time temporarily suspended. The Newcastle patient was reported as having died “from the effects of chloroform;” but she died from the effects of artificial asphyxia when chloroformed. If a man were made insensible by opium, and then asphyxiated by a wet towel being laid over his nose and mouth, no one would report that he had died “from the use of opium,” but from the effects of artificial asphyxia when opiated. Dr. Simpson expressed his sincere conviction, that if the patient had been simply left alone, and *nothing* had been done, she would have rapidly recovered, like all other patients, from the state of anæsthesia. It was the means used to revive her that produced death; not the chloroform-inhalation. He then went on to say, that in any case where the anæsthesia remained too deep or too long, the adoption of artificial respiration formed the proper measure of resuscitation—not the prevention of all respiration, by filling the mouth and throat by stimulant or other fluids. In a paper on chloroform, written in November last, and published in the “Monthly Medical Journal,” Dr. Simpson had warned the profession that chloroform was an agent so potent as liable to produce serious consequences, and even death, when improperly used. He said he had for some time expected to hear (though the present case was not one) of fatal results from it alone, knowing, as he did, the many thousand cases in which it was now constantly employed in Great Britain and throughout the Continent. Dr. Simpson commented on the immense quantity of chloroform already made and sold here and elsewhere, and on the consequent vast numbers of persons that must have been already safely placed under its influence; and he stated that perhaps the use of as many thousand common doses of any of our common medicines, such as opium, antimony, senna, &c., by as many thousand different persons and constitutions, would probably scarcely have been accompanied with equal safety and equal impunity in the results. He cited several cases in which (before the introduction of ether and chloroform) surgical patients had died on the operating table ere the operation was begun, during it, or immediately after it was finished; and when the operation was by no means severe. Every such case happening for years to come will, of course, be eagerly ascribed to chloroform, though such things not unfrequently happened long before chloroform was ever known. And supposing even it did prove fatal, when indiscreetly managed, in one rare case in a hundred thousand, it would be no reason to argue against its utility, any more than there would be reason in arguing against the utility of coaches and railways, on the ground that occasionally, from carelessness, an accident or death occurred among the passengers. He concluded by stating that he had the satisfaction of believing that, by saving much human suffering and agony, chloroform had already saved much human life. Such a case as the present was well calculated to teach a salutary degree of caution; but it could and would do no ultimate injury to the general adoption and spread of the practice of anæsthesia.

—On the other hand, Dr. Snow, who took part in the discussion on the case, does not hesitate to admit that the chloroform was the cause of death, and attributes

it to the rapidity with which it was administered, and the concentrated form in which the vapour was consequently inhaled. He, as we have before stated, has noticed the cumulative action of the vapour, and that it is therefore not possible to judge of the ultimate effects of the inhalation from the effect produced at the time the inhalation is discontinued. This cumulative action would of course be proportionably great, as the inhalation was rapid, and the vapour concentrated.

We are disposed to adopt Dr. Snow's explanation in preference to that of Dr. Simpson; but we do not on that account consider any fair objection to the use of chloroform can be deduced from it, nor, indeed, had the deaths been fifty instead of one or two; the proportion is so small in comparison with the thousands of instances in which benefit has been derived, or at least no injury sustained, that we should still have less reason to abandon its exhibition than we have for abolishing the use of opium.

—The second death from chloroform occurred in the person of a chemist's apprentice, who was in the daily habit of using it by pouring it upon his handkerchief. While inhaling in this manner, his head appears to have fallen forward upon his saturated handkerchief, which he had placed on the counter, and he was therefore as effectually destroyed as were the animals in Mr. Wakley's experiments.

65. *Therapeutical Application.*—Chloroform has been used with variable advantage in many diseases of the nervous system. In *delirium tremens* it has been found to produce sleep after the failure of large doses of opium. In *mania* it has tranquilised the patient, but without producing any permanent benefit. In *tetanus* it has been successful in one case; in others it has aggravated the symptoms. In *chorea* it has failed. In *neuralgia* it has been very serviceable when the pain did not depend upon organic disease, or was not accompanied by symptoms of cerebral disturbance.

A marked instance of its advantage in *infantile convulsions* has been recorded.

It has also been given advantageously in *asthma*, to subdue the *cramps of cholera*, in *renal colic*, and in *dysmenorrhœa*.

Since his attention has been given to the subject, some other fluids have been discovered and tested by Dr. Simpson, which are capable of inducing anæsthetic insensibility. These are thus described by Dr. Simpson:

66. *Chloride of Hydrocarbon*—This is one of the fluids to which the name of chloric ether was for some time given. It is composed of four atoms of carbon, four hydrogen, two chlorine ( $C_4H_4Cl_2$ ), sp. g. 1.247, boils at 148. Dr. Simpson states, that it can rarely be inhaled so as to produce perfect insensibility, on account of the irritation of the fauces which it causes; but in one case in which it was perseveringly inhaled, anæsthesia was induced, without excitement of the pulse or subsequent headache.

67. *Nitrate of Ethyle* is a transparent, colourless fluid, made by distilling two parts alcohol, one part of nitric acid, and a small quantity of urea. Its formula is  $(C_4H_5)O NO_5$ . It is easy and pleasant to inhale, and possesses rapid and powerful anæsthetic properties. It, however, generally produces great headache and giddiness.

68. *Benzin* is a clear, colourless liquid. Its formula is  $C_6H$ . Dr. Simpson found this also to produce great subsequent cephalic disturbance. Dr. Snow found it succeed very well in four cases of tooth-drawing; but he does not consider it suited to severe operations.

69. *Aldehyde.*—This is a limpid, colourless fluid, with a formula of  $C_4H_3O + aq$ . It was found by Dr. Simpson to be all but irrespirable.

70. *Bisulphuret of Carbon.*—This fluid is obtained by passing the vapour of sulphur over fragments of charcoal heated to redness in a closed porcelain tube. It is clear and limpid, with a specific gravity of 1.272. Dr. Simpson found it a rapid and powerful anæsthetic. Some persons described it as pleasanter to inhale than chloroform; but in others it produced disagreeable headache and prostration. It is not, in his opinion, to be compared to chloroform either in manageableness or effects.\*

71. In connexion with the subject of anæsthetics, we may mention a paper by



Dr. Silvester on the ancient mandrake, *Atropa mandragora*. This paper displays considerable research, but is a disquisition rather curious than useful.\*

72. *Cod-liver oil*.—We have to record certain recent communications upon the powers of this medicine. The following account of the chief forms of disease in which it has been found useful is taken from an essay on the "History of the Fish-liver Oil," published in the "Gazette Médicale de Paris."

*Chronic rheumatism*.—According to Alexander, Knood von Helmsdorst, Amelung, Brefeld, Basse, Fehr, Galcoma, Mall, Mœnig, Münzthal, Michaelis, &c., who have all published their own observations concerning the fish-liver oil in chronic rheumatism, this medicine possesses such an efficacy in this disease that it surpasses in their eyes all the other remedies, without excepting the most lauded anti-rheumatics.

This opinion of different physicians, who have all experimented by themselves, cannot be taxed with exaggeration, if it is considered that amongst these cases there are found numerous instances of rheumatic patients being cured, who, after many years of suffering, and usage of all sorts of remedies, having lost their strength and despairing of cure, were completely cured by the aid of the fish-liver oil.

*Rheumatic sciatica*.—The fish-liver oil did not prove less efficacious in this form of chronic rheumatism, which is generally distinguished by its obstinacy; this is verified by the observations of MM. Knood von Helmsdorst, Rust, Amelung, Münzthal, Settenger, and Spitter.

*Scrofulous diathesis*.—Although there are various observations published in support of the excellence of this oil for certain severe forms of confirmed scrofula, it requires something, candidly speaking, which will prove its efficacy in the scrofulous diathesis with certainty. The cause of this doubt ought not to be looked for in this circumstance, that the liver oil is less applicable in the scrofulous diathesis than in certain of the more severe forms of scrofula, but that the greater part of physicians are in the habit of only publishing their observations of the more severe cases. But if we consider that the scrofulous diathesis is the principle from which emanates, by the accession of aggravating circumstances, all the numerous and often dangerous forms of scrofula, and that the liver oil is in our eyes a true specific for the more severe forms of this affection, it is evident that this medicine is that which ought to counteract this principle with most certainty. Such is the opinion of M. Brefeld and Dr. Galama, who say that the liver oil is the most efficacious remedy for the scrofulous diathesis, and for no matter what form of confirmed scrofula.

*Confirmed scrofula*.—Amongst the facts relative to the use of the liver oil in some of the manifold forms in which confirmed scrofula is presented, the most remarkable are those which Drs. Brefeld and Roppe have made known, the result of which is that this medicine universally is fit for all forms and kinds of scrofula. The principal forms of scrofula in which it has succeeded are given below.

*Swelling of the lymphatic glands*.—Under this title we have only to do with the swelling of the superficial lymphatic glands, situated immediately under the skin, in the region of the throat, to the nape of the neck, armpits, or groins.

The fish-liver oil is considered a certain and infallible remedy in swellings of the lymphatic glands which appear oftenest, first under the form of hard unequal tumours, nearly immoveable and insensible, but which afterwards, when inflammation has laid hold of the cellular tissue which surrounds them and the skin which covers them, they become inflamed, and suppurate in their turn. The cure always requires a much longer time where these swellings are connected with a confirmed scrofulous diathesis. This also can be advantageously influenced by the external use of the oil by frictions on the painful and inflamed tumour; this way of employing the medicine is that which has prevailed and which is recommended by the greater number of practitioners in this form of scrofula. But if the fish-liver oil is efficacious in swelling of the lymphatic glands of a scrofulous origin, it is absolutely useless in swellings of the same glands which are the consequence of smallpox, measles, or scarlatina, or even those which are developed in the course of syphilis, or of a carcinomatous affection.

\* Medical Gazette, and Pharm. Journal, May.

*Scrofulous Ulcers.*—The effect of this medicine is quicker and more remarkable in scrofulous ulcers, with fungous and irregular borders, generally so difficult to cure, which arise either from suppurative inflammation of lymphatic glandular swellings, or from the dissolution of those indurated strumous tumours which are found so often in subjects of a scrofulous constitution, in all parts of the body indifferently. It has the same effect also in different traumatic lesions which so frequently become the origin of ulcers in subjects of a full scrofulous habit. Dr. Brefeld relies greatly on the external use of this oil, with which he prepares an ointment which he applies to the ulcers by means of a pledget. In one case, notwithstanding, treated by the oil internally, the result was as favorable. The strumous tumours, which we have referred to above, and which ought to be distinguished from lymphatic glandular enlargements, are perfectly cured by the fish-liver oil, even after they have passed into the ulcerous state, provided that the oil be administered in proper time; it was the same in the case of the tumour being on the point of becoming an abscess. The tumours decreased during the internal and external administration of the medicine, and it seems they became dried up.

*Chronic exanthemata.*—The fish-liver oil has been proved equally efficacious in the chronic exanthemata which are developed under the influence of a scrofulous diathesis, whether they occupy parts of the body covered with hair or places which are destitute of it.

In this case, some say they have obtained the best results from the internal use of the oil, while others pretend, on the contrary, to have obtained as good results by the external use of the same remedy. The usage of it externally, tried for the first time with success by Dr. Guerard for scald head, is principally recommended by Dr. Brefeld, and who pretends, what is more, not to have obtained any good result from the internal use of the liver oil in the exanthematous form of scrofula.

The milky scurf, so often observed in ill-nursed children, in whom there has never before been observed any symptoms of scrofula and which, according to Dr. Brefeld, forms the transition of true scrofulous exanthemata; the exanthemata which are observed on the long-haired skin of young children, and which often envelops the whole face; scald head, which is not uncommon to see last till the age of puberty; and, finally, the scrofulous exanthemata which comes out on every other part of the body, were quickly cured, according to Dr. Brefeld, by the external use of the liver oil, and even after that in some cases they had for a long time used the internal treatment in vain. Experience taught him that the use of the liver oil, either externally or internally, had no effect on malignant, hereditary, or contagious scald head, even when combined with oil of turpentine by the advice of Dr. Marteus; the same may be said of some psoriacal and syphilitic exanthemata.

Dr. Hauf reports a case of humid herpes causing an insupportable pruritus, which, after having resisted all sorts of remedies, was cured by the use of friction of fish-liver oil.

*Rachitis.*—The fish-liver oil is, without exception, the best remedy for rachitis, in all its stages, and under whatever form it presents itself; such is the nearly unanimous opinion of the German and Dutch physicians, who affirm with one accord that it is much superior to any of the so-called anti-rachitic remedies. According to Dr. Schmidt, who has most insisted on the advantages of this medicine, in twenty-one rachitic patients which he had treated at the time when he made known his results, thirteen were cured, four were in process of being cured; as to the others, judging from the progress which they had made for the little time they were under treatment, a very favourable prognosis might be drawn.

In France, far from partaking of the enthusiasm of the German physicians for this medicine, they have kept on their guard, perhaps with an exaggerated distrust: its efficacy in rachitis has nevertheless appeared to some placed beyond doubt. We have said that M. Bretonnean, and M. Trousseau, by his example, had obtained good results. It is in these terms that Professor Trousseau expresses himself on this subject: "We have often obtained cures, the rapidity of which surpassed our expectation. Sometimes, after four days of treatment, the sharp pains which the children felt in all their limbs ceased; and the bones, which could be bent, acquired, at the end of five days, a considerable solidity."

*General conclusions.*—Chemical researches have taught us that the fish-liver oil

ought to be considered as a very compound medicine. Greasy neutral matter, bilious matter, iodine, phosphorus, each of them well known as possessing great therapeutic efficacy—also a certain number of organic elements, such as butyric acid, gaduine, and some others, the medical action of which is less known—finally, various inorganic salts, as the phosphate and sulphate of lime, chloride of lime, phosphate and sulphate of magnesia, are the substances of which it is composed.

But, it may be asked, to which of these components does the oil owe its special virtues? Is it to the iodine, fatty matters, phosphorus, or other principles?

If the diseases, for which the liver oil is administered with success, be duly reflected upon, it cannot escape any one that there are in each of them various indications to fulfil to obtain a cure. For the most part, there is debilitated digestion to be excited, nutrition to be regulated, secretions to be re-established, and the lymphatic system to be stimulated; while, on the other hand, the modifying of the organic nervous system is presented as one of the most important indications to be fulfilled. Neither the bilious matter, nor the fatty matter, nor the iodine, nor any other principle, whatever it may be, taken alone, is capable of satisfying at the same time all these indications, and it is not to any of these substances in particular that the fish-liver oil owes its medicinal properties, and the faculty of fulfilling so different and so numerous indications. But it is by the union and co-operation of, if not all, at least the greater number of these substances.

In this state of things, the active principle of the fish-liver oil cannot be discussed in particular, like the active principle of cinchona: but attention ought to be paid, if not to all, at least to the principal elements of the oil, as each of them satisfying special indications which the diseases for which this medicine has been proved efficacious, present.

The medical researches having proved that the black fish-liver oil is more efficacious in rheumatism and scrofula than the other species, and the chemical researches having shown, on the other hand, differences, if not qualitative, at least quantitative, between the three kinds of oil examined, it follows that the principles that are in greater proportions in the black oil than in the other two kinds, ought to be considered as those which best fulfil the principal indications. Therefore it is not the neutral fatty matters, which are found in nearly equal quantities in the three species, nor the iodine, nor the phosphorus, nor the organic salts, which are found in greater quantity in the pale oils than in the black oil, which can be considered as more efficacious than the other principles for the cure of rheumatism and scrofula. It appears, then, that it is to the bilious matter and butyric acid, rather than the other principles, that the greater part of the therapeutic effect can be principally attributed, for they are the substances which are found in the greatest quantity in the variety of oil proved to be the most active.

As to the matter unknown up to this time, and which M. Jough first proved the existence of, in the product of the analysis of the different species of *Gadus*, and to which he applied the name of *Gadine*, it does not appear, on account of its insolubility, at least in the condition in which it was examined, to have a right to be considered as an active principle of the fish-liver oil.\*

—Dr. Bennett considers that the therapeutic action of cod-liver oil is due to its fatty composition, and its being perhaps more easily assimilated than other fats. He believes that in rheumatic and tubercular affections, the albuminous compounds are in excess, and the oily compounds deficient; that, therefore, the most rational treatment is to supply the deficient oily matters directly. He explains the failure of other oils to effect benefit, which might be expected, if the fatty matter is the active principle, upon the supposition that other oils, such as olive oil, are purgative. The author proceeds to state that he thinks cod-liver oil is destined, in the hands of the rational practitioner, “to be an important means of curing a class of diseases hitherto considered of the most dangerous and fatal character.”

Speaking of the effect of this oil in phthisis, Dr. Bennett’s testimony is greatly in its favour; and, in fact, it may now be satisfactorily demonstrated that there is

\* *Gazette Médicale*, and *Dublin Med. Press*.



no medicine or system of treatment which holds out so much encouragement in the management of consumptive cases.\*

72. *Iodized Oil*.—M. Marchal (de Calvi), suspecting that the virtues of cod-liver oil are attributable to the small portion of iodine contained in it, gives the iodide of potassium dissolved in almond oil, thereby, as he considers, increasing its effect.† [We have for some time been in the habit of giving the iodide of iron in combination with the cod liver oil, and have had reason to believe that its efficacy has thereby been augmented.]

73. *Iberis Amara in Chronic Bronchitis, &c.*—The advantages of this herb in chronic bronchitis, asthma, dropsy, and cardiac hypertrophy, are mentioned by Dr. Sylvester. Its action appears to be somewhat similar to, but less active than, digitalis, controlling the heart's action, without depressing its powers. The part employed is the seed. The dose 3 grs. with cream of tartar.‡

74. *Phellandrium Aquaticum in Disease of the Respiratory Organs*.—M. Michea states that he has frequently taken occasion to exhibit this substance in cases of bronchitis, chronic catarrh, pulmonary phthisis, asthma, and other affections of the chest, and has mostly derived favourable results from its application. The action which the seeds of *Phellandrium aquaticum* exercise on the respiratory organs seems to be both stimulating and sedative; they abate the violence of the cough, and diminish or relieve altogether the oppression of the chest by facilitating expectoration.

As regards the best form under which the seeds of *Phellandrium aquaticum* may be exhibited, experience has taught the author that this remedy may be advantageously given in powder, at the dose of about eight grains twice a day (mixed with sugar), or, better still, in form of syrup. The latter form is more convenient and agreeable than any other, and the curative effect seemed always more prompt and certain. The patient should be recommended to take from two to four tablespoonfuls of the syrup per day, and to continue the use of the remedy without intermission for six weeks or two months; at which period the beneficial effects of the phellandrium will become appreciable.§

75. *Use of Ice in Exhausting Diseases*.—Some interesting cases are quoted in a recent number of the "Revue Médico-Chirurgicale," from a French journal, in which ice taken internally seemed to be of great service in reviving powers fast sinking. The writer employs it in various diseased conditions, providing these manifest the signs of intense debility. The reaction it induces may prove curative in some cases; while in others, in which this is impossible, a marked temporary amelioration of the patient's state occurs. In the cases in question there are great atony and extenuation, and an extreme aversion to any food whatever, with or without a development of heat. A number of morbid states and organic lesions, having no other points in common, may induce this condition. Iced water does not succeed anything like so well as the administration of the ice in little lumps, which, by requiring time for their solution, ensure its gradual introduction. These impart great tone to the system, and revive the inclination for food in a remarkable manner.||

\* "On Cod Liver Oil," Edinburgh, 1848; and Monthly Journal, May, 1848.

† Gazette des Hôpitaux, No. 13, 1848.

‡ Prov. Med. and Surg. Journal, July 28, 1847.

§ Répertoire de Pharmacie.

|| Rev. Med.-Chir., vol. ii. p. 168.

## II.

### REPORT ON THE PROGRESS OF SURGERY.

BY HENRY ANCELL, ESQ. M. R. C. S.

Our readers will observe, in the present Volume, several extracts of which Mr. Vincent is the author (Arts. 46, 55, 63, 64, 69, 73, 76). This gentleman having been for a long series of years one of the principal surgeons to St. Bartholomew's Hospital, and having retired from that wide field of surgical experience, has favoured the profession with his "*Observations on some of the parts of Surgical Practice*," and, more especially, with the results of his reflections "*On the Claims that Surgery may be supposed to have for being classed as a Science*." Mr. Vincent endeavours, in the first place, to fix more clearly the precise distinctions that exist between science and art; he believes that the pretensions of surgery to the former are questionable, and his object is to show that surgeons have a duty incumbent on them, to improve the scientific character of their profession, and to afford increased benefit to the public by availing themselves, in their branch, of the powerful aids which real science must necessarily impart.

After describing the character of true science, that its seat is entirely in the mind, and that it depends upon the operations of the intellect, and after drawing as widely as possible the line of demarcation between science and that knowledge which is to be obtained by the mere perception, and showing that thought is not held in the distinction it is entitled to, few being either masters or judges of it, popularity being more easily acquired by those who have an insight into a great deal superficially than by the intellectual accomplishment of intense thinking.—and after broadly stating, that "opinion is so much the guide of medical conduct, that it is sometimes actually regarded and valued as much as a sound judgment."—Mr. Vincent affirms, that the practice of surgery is at present little more than a collection of opinions, unstable and fleeting, and generally furnished by those whose position in the surgical society of the day gives them tone, and possessed of but small value in a scientific point of view, as proved by their unstableness: that surgery is, in fact, taught and pursued by prescription.

On the subject of *Operative Surgery*, remarks are made by Mr. Vincent which, by the more judicious of the profession, may be regarded somewhat as the expressions of a truism, but are yet worthy of record as the results of a long course of experience. We have lived long enough ourselves to have witnessed instances of disease in which the surgeon of the present day operated in the earlier part of his career, and now, after the lapse of years, having earned his reputation by operating, refuses to use the knife. We believe that in similar instances the younger surgeon, instead of profiting by the experience of his predecessors, is too frequently allured into the same career, and, by lapse of time, will read his juniors the dearly-bought lesson of his own proper experience.

The great importance attached to operative surgery is probably the origin of this evil. In Mr. Vincent's mind, operations do not confer any compliment to the scientific character of surgery;—surgeons—he proceeds to state more generally—"whose qualities of mind barely rise to that level in which intellect can direct them to real scientific studies, fix upon the display of operative surgery as a department in which they think to shine;" but a vast number of operations are continually performed, which would be inadmissible if science had enlightened surgeons and enabled them to form correct judgments. "Surgery, as a science, would decide many questions in the way of avoiding operations," and "the surgeon too eager for performing operations, is not likely to impart scientific principles

to his art. The improvement of surgery upon scientific principles," Mr. Vincent remarks, "must commence and proceed by investigating the more common instances of disease, by which there is afforded a larger field for making observations, a wider latitude for determining the relations, and a greater facility for obtaining the points of bearing the facts have with each other, than the consideration of rare specimens of disease can afford. In this way only is the greatest knowledge to be acquired." Attaching so much importance to rare cases does little more than give currency to ill-formed opinions. The inquiries now on foot to demonstrate the ultimate *moleculæ* of matter, is regarded by the author as another search after the philosopher's stone, or the monads of Leibnitz; and the impression existing in the minds of men that this is the best road that philosophy can take, is another impediment to the progress of scientific surgery.

Without giving their entire assent to all Mr. Vincent's views, our readers will no doubt admit that, in the main, they embrace much of the truth, and that our own pages are too frequently calculated to bear them out. At the same time, we are inclined to believe, that there is more of the truly scientific mind, even as strictly understood and defined by this gentleman, abroad amongst surgeons, than he appears disposed to allow. The slow progress of surgery as a science is the slow progress of our knowledge of the laws of vitality. The difficulties of surgical science are the difficulties of the science of life. Again, the accumulation of facts, the "perceptive knowledge," as Mr. Vincent describes it, is not to be found fault with; it is the paucity of these facts on any given subject, and the assumption of erroneous observations and opinions as facts, which constitute the obstacles, in many instances, to our arriving at scientific principles. It is a long-cherished opinion of our own, that a *Novum Organum* is the great desideratum, not only in surgery, but in the whole range of medical knowledge. All again must agree that there is too little intellectual culture in the youth of our profession; as Mr. Vincent beautifully expresses it, "the ant and not the bee is made the symbol of their endeavours;" but this remark is not exclusively applicable to surgical science; the foundation of the evil lies in the defects and erroneous principles of early and more general education. A discussion of these highly important subjects cannot be introduced into these pages; but we doubt not that Mr. Vincent, and our readers generally, will participate with us in the hope and belief,—although it is not every age, or every department of knowledge, which can boast a Newton,—that the anticipation, at no distant period, of a more philosophical system, a "*NOVA PRINCIPIA*," MEDICINE, giving unity and stability to the sciences embracing medicine, and surgery, is not altogether Utopian.

The *prevention of pain during surgical operations* appears now to be admitted as an established principle in surgery; instances of all the varieties of amputation, of lithotomy, hernia, the resection of bones, the removal of tumours, the reduction of dislocations, and, indeed, of all the greater operations in surgery, successfully performed during the insensibility of the patient, are recorded in the medical journals: and the superiority of chloroform over ether, as an anæsthetic agent, has been all but universally admitted. It is totally unnecessary to encumber our pages with a description of cases which present no peculiarity, except the circumstance of operations having been performed without pain, or without the consciousness of the patient, since nearly every surgeon in the kingdom must either have availed himself of the agent in his own practice, or witnessed it in that of others; but it is a notorious fact, that more than one individual has met with his death by the use of chloroform, and that unpleasant and even dangerous effects, as delirium, convulsions, &c., have manifested themselves in many cases. Although experience has proved that chloroform is possessed of all the advantages enumerated in the Report of the Editor in the last Volume of the "*Abstract*," p. 347, yet it appears to be a more powerful, and, as such, a more dangerous agent than ether, and, accordingly, every practitioner is called upon to make himself well acquainted with its physiological and pathological effects, and especially with the modifications of those effects which result from differences in the age, sex, and temperament of individuals, from varieties of constitution and diatheses, the existence of cachexies, or predispositions to disease, or the actual progress of local or general disease, and also with the immediate and remote effect, which, under the use of these powerful agents, may result from the absence, diminution, or altered state of



*cænesthesis*, in the various accidents and circumstances in which they are now employed.

In our last Volume (p. 198) our readers were made acquainted with Dr. Snow's observations respecting the use of *ether*, and the symptoms of the different degrees of etherization. In a communication made since the introduction of *chloroform* by Dr. Simpson, Dr. Snow states that the description of the different degrees of narcotism, from the action of the former, is equally applicable to the effects of the latter, and of other agents of a similar kind.\* As in the use of ether, it is generally necessary to carry the effect of chloroform to the third degree, and sometimes to the fourth degree, to be certain of avoiding pain. Dr. Snow considers that ether has in general a greater anæsthetic effect than chloroform, in proportion to the narcotism, and that where it has appeared to be otherwise, the action of the latter has been carried further. Chloroform has the advantage over ether of being less pungent, and more readily inhaled; it occupies less space, and therefore excludes less of the air that the patient should breathe; it does not excite a profuse flow of saliva, as ether sometimes does; but Dr. Snow does not consider its greater rapidity of action altogether an advantage. He remarks that ether required four or five minutes to produce its full chirurgial effect; and although it might be desirable to shorten the time to a certain extent, it is not desirable that the time should be less than two minutes—not only that there may be ample opportunity given for the surgeon to observe its effects, but because *chloroform has a cumulative property*.

This cumulative property is of the utmost importance. Dr. Snow has often observed the insensibility *increase for twenty seconds after the inhalation has been left off*. He has marked this by the watch; and his experience induces him to say that he prefers taking six times this period, or two minutes, for producing complete insensibility; whereas, when administered according to Dr. Simpson's plan, its full effect is frequently obtained in a much shorter period, and a "snoring sleep" is very rapidly produced. Dr. Snow regards this snoring sleep as the fourth degree of narcotism, and as but one remove from a *total cessation* of respiration, and he considers it unadvisable to induce this state *with such rapidity*, lest the narcotism should proceed a degree further, *after the inhalation of the vapour*, by virtue of the cumulative effect of the agent. M. Sedillot also stated, in the Academy of Sciences, that with chloroform, the pallor, smallness of pulse, weakness of respiration, and coldness of the skin, sometimes increase after the inhaler has been removed, in an alarming manner.† The same cumulative property has been noticed by Mr. Sibson and others: thus corroborating the observation originally made by Dr. Snow.

In a pamphlet published by Mr. Curling,‡ we find this gentleman still disposed to think that in some cases a preference ought to be given to ether as an anæsthetic agent. "Chloroform," Mr. Curling states, "has a greater tendency to produce involuntary muscular contraction, and exerts also a more direct and a more powerful influence on the heart than ether. In those cases, therefore, in which we desire chiefly to obtain muscular relaxation, and in persons whose powers are much depressed, it may be advisable to employ ether. Ether is, perhaps, better suited also for those cases in which we desire to prolong the insensibility to pain, as its influence is less transient than chloroform, and more readily rendered persistent." A mixture of the two has been employed in Vienna; and this plan has been tried with advantage by Mr. Curling.

On the general utility of anæsthetic substances, it is remarked, in this work, that, besides being useful in diminishing the shock of operations and subsequent reaction, they operate beneficially by rendering the after exhibition of opiates unnecessary; and, further, according to Mr. Curling's experience, "the constitutional symptoms have been milder, and the cases have proceeded more satisfactorily, than after operations in which no means have been taken to prevent pain." He deems a further advantage to accrue from the less need of rapidity in operating; from an opportunity being given of acting with greater deliberation and ex-

\* Medical Gazette, Jan. 1848.

† Medical Gazette, March, Feb. 18, 1847.

‡ "On the Advantages of Ether and Chloroform in Operative Surgery," by J. B. Curling, Esq., 1848.

posure; and from the composure of the patient. In children, these several advantages of anæsthetic agents become still more prominent. That insensibility can be brought about, renders amputation of the breast for malignant disease much less objectionable than otherwise.

It is admitted by Mr. Curling, and by most of the writers upon the subject, that in certain states the full effects of these agents cannot be produced without danger; as examples, organic diseases of the heart, especially a dilated or weak heart, and a tendency to congestion in the brain in plethoric individuals, are especially mentioned. On the objection that injurious effects have been produced on the constitution, increasing the fatality of operations generally, Mr. Curling appeals to facts which tell strongly in favour of anæsthetic agents. Of seventy-three cases of amputation of the thigh and leg, where the patients were rendered insensible, fourteen proved fatal, giving a mortality of about nineteen per cent. Of one hundred and thirty-four cases, where no anæsthetic measures were resorted to, fifty-five were fatal, giving a mortality of forty-one per cent., more than double that after their exhibition. Another equally favourable statistical statement is made; and, in concluding, the writer makes one further observation worthy of note, remarking, "There is a condition in which the surgeon would naturally be extremely cautious in giving anæsthetic remedies, until experience had fully proved that they might be safely employed." This condition is shock from an injury.

Where this state is excessive, and sensibility is consequently annihilated, a prudent surgeon would not venture to give chloroform, nor would it be needed. But when patients "have recovered from the first effects of the shock, and though the heart acts feebly, there is sufficient power to admit, if necessary, of operative proceedings, in such cases, anæsthetic remedies usually exert a beneficial effect," acting as stimulants; saving the hurtful effects of a second shock; inducing a healthy reaction; and altogether placing the patient in a more favourable state for recovery than where such means have not been resorted to. Lastly, where operations are needed, in persons reduced by previous illness or exhausting discharges, anæsthetic agents have helped to support the patient during the operation, and have had an exhilarating effect upon the powers of life afterwards. But in such cases, it must be borne in mind, that their effects are readily and quickly developed; and caution must be observed, so as not to produce too powerful an effect.

These views are amply confirmed by Dr. Simpson,\* in a "Statistical inquiry into the results of anæsthesia in amputation." According to Dr. Simpson's returns, which have been collected with great industry and care, and collated with the author's well-known talent, the following table exhibits—

THE MORTALITY OF AMPUTATION OF THE THIGH, LEG, AND ARM.

Name of Reporter.	No. of Cases.	No. of Deaths.	Per Centage of Deaths.
Parisian Hospitals—Malgaigne . .	484	273	57 in 100
Glasgow Hospital—Lawrie . . .	242	97	40 in 100
General Collection—Phillips . . .	1,369	487	35 in 100
British Hospitals—Simpson . . .	618	183	29 in 100
<i>Upon Patients in an Etherized State</i> .	302	71	23 in 100

Thus, in every 100 persons submitted to amputations of the thigh, leg, or arm, the lives of 6 were, by the employment of etherization, saved, above the average number of the same operations in British hospitals:—17 lives in each 100 were saved, if we take the Glasgow returns as a standard of comparison; the average mortality was, under ether, less by 34 in every 100 cases than that which was found by Malgaigne to accompany the same operation in the Parisian hospitals.

Taking a single operation as a standard and medium of comparison, so as to render the result more clear, Dr. Simpson's investigation furnishes the following table:

\* Monthly Journal of the Medical Sciences, April 1848.

## MORTALITY OF AMPUTATION OF THE THIGH.

Name of Reporter.	No. of Cases.	No. of Deaths.	Per Centage of Deaths.
Parisian Hospitals—Maligne . .	201	126	62 in 100
Edinburgh Hospital—Peacock . .	43	21	49 in 100
General Collection—Phillips . .	987	435	44 in 100
Glasgow Hospital—Lawrie . .	127	46	36 in 100
British Hospitals—Simpson . .	284	107	38 in 100
<i>Upon Patients in an Etherized State</i> .	145	37	25 in 100

The figures, Dr. Simpson remarks, speak in a language much more emphatic than any mere words, in favour of anæsthesia, not only as a means of preserving surgical patients from pain, but as a means also of preserving them from death. Between even the lowest mortality in the table without ether, 36 in 100, and the rate of mortality with it, 25 in 100, there is the difference of 11 per cent. That is to say, according to this standard, out of every 100 patients submitted to amputation of the thigh without anæsthesia, 11 more would die from the operation than if the same 100 patients were submitted to the same operation in a state of anæsthesia. And if the condition of anæsthesia effects thus a saving of 11 lives in every 100 amputations of the thigh,—then out of every 1000 such operations the lives of 110 patients would be preserved by the use of antipathic means.

When etherization first began to be employed in surgical operations, it was eagerly argued that its adoption produced a greater tendency to primary and secondary hemorrhage, to imperfect union of the wounds, to pneumonia, &c. From the analysis of the three hundred cases of amputation reported, these various allegations were ascertained by Dr. Simpson to be foundationless and imaginary.

A very interesting article on the effects of chloroform, and other narcotic agents, has also been published by Mr. Sibson, of Nottingham.\* Mr. Sibson remarks that the key to the knowledge when the stage of safety, or sopor, is about to emerge into that of danger, or coma, is the action of the pupil, “chloroformization ought not to be continued one instant after the pupils, previously contracted, have begun to dilate.” This writer also states that “if complete muscular relaxation be sought for, as in hernia, to facilitate taxis, in dislocation, to make reduction easy, and in tetanus, then it will be needful, in general, to urge the patient from sopor into coma; but as soon as the muscular relaxation is secured, the inhalation should cease.

The principle that it is important to dilute the chloroform vapour largely with air during the first few inhalations, has been generally admitted. Mr. Sibson remarks, “so as to avoid the sudden shock on the nerves of the lungs, and accustom them to its presence.”

The following practical caution is given by Mr. Curling: “To be careful to secure the principal vessels divided, since, in some cases, the heart’s action is rendered so feeble, that vessels of considerable size scarcely bleed, and so may escape observation, but will burst forth when the influence of the chloroform has passed away.”

If, as an effect of chloroform, natural respiration should cease, the appropriate remedy is *artificial respiration*, and the surgeon should at all times be prepared to resort to this without delay: M. Plavier has performed experiments on animals, proving that, in apparent death from ether or chloroform, life may be restored by artificial respiration. Should the action of the heart cease with the respiration, Mr. Sibson recommends the abstraction of two or three ounces of blood from the jugular vein, to relieve the distension of the heart, and permit the renewal of its action.†

The case of Mary Greener, which proved fatal, and became a subject of medico-legal investigation, was simply this:—She was suffering from onychia: Mr. Meggison seated her in a chair, and put about a teaspoonful of chloroform into a table-

\* Medical Gazette, Feb. 18, 1843, p. 267.

† Liber citatus, p. 271.



cloth, and held it to her nose; after respiring twice she pulled his hand down; he told her to draw her breath naturally, which she did, and in about half a minute the muscles of the arm became rigid, and her breathing a little quickened, but not stertorous: the pulse was natural until the muscles became rigid; it then appeared somewhat weaker, but not altered in frequency; the toe-nail was then removed; when the semicircular incision was made, she gave a jerk; her eyes were then closed, Mr. Meggison opened them, and found them congested, they remained open; her mouth was open, and her lips and face blanched; water dashed in her face produced no effect; she swallowed a little brandy with difficulty; she was laid upon the floor, and an attempt made to bleed her, but she was dead; the time not being more than three minutes from the first inhalation of the chloroform till her death.\*

In a subsequent communication, Mr. Meggison states that, after the cloth was removed from her face, the respiration was at first somewhat quicker and stronger, then became very rapid, and ended in a prolonged forced expiration or splutter, the remaining expirations and inspirations being exceedingly feeble and few. Dr. Snow remarks, that it is evident from this that the fatal event arose from the cumulative effect, after the inhalation was discontinued.†

Besides ether and chloroform, other anæsthetic agents have been proposed: Dr. Simpson made trial of several chemical substances, and in particular of *aldehyde*. M. Poggiale, Professor of Chemistry at the Val de Grâce, seems to have been the first to announce that the inhalation of the vapour of aldehyde is speedily followed by the most complete insensibility.‡ Its effects are even more rapid and more powerful than those of chloroform, but it is a more irritating substance, and has a more powerful odour, qualities which are likely to prevent its becoming a substitute for chloroform. M. Poggiale's experiments were made only on animals. Dr. Simpson has tried the respiration of this substance, and also of chloride of hydro-carbon, nitrate of ethyle, benzoin, and bisulphuret of carbon, but not one of these proved comparable with chloroform or sulphuric ether; they were less manageable, and their after consequences too severe and too frequent to admit of their introduction into practice.§

2. On the subject of *Operative Surgery* generally—passing from the great discovery of the day—a memoir has been read by Dr. Vidal (de Casis) to the Academy of Medicine (Jan. 25), on the *performance of operations at intervals* (*en plusieurs temps*).|| Dr. Vidal states that, in his opinion, operative surgery yields too frequently to the ancient rule of “unity of time,” and does not sufficiently obey the laws of Nature. He combats the precept of unity of time, and defends the advantages of a contrary principle, that of operations performed at intervals.

He gives this denomination to operations which the surgeon accomplishes in several successive actions, separated by more or less considerable periods of time. No doubt, nothing can be more brilliant than the removal in a few minutes of a disease which for years had threatened life; but it also sometimes happens that the sudden, and, as it were, instantaneous removal of an ancient malady, to which the system had become almost accustomed, causes a deep disturbance and depression of the constitution, and prevents the possibility of a salutary reaction after the accomplishment of the operation. Besides, in a properly regulated method, there are circumstances which can be brought about only by the intervention of Nature. For instance, when a foreign body, engaged deeply in our structures, is eliminated without the interference of art, Nature causes successive divisions and cicatrizations, by which the foreign body is gradually brought to the skin. Thus, in abscess of the liver, whilst ulceration destroys the walls of the purulent sac, adhesions form between the visceral and parietal layers of the peritoneum, which prevent effusion of pus into its cavity; this synthesis, which cannot be executed by the surgeon, must perforce be confided to Nature, in order to avert a fatal accident. . . . The intervention of Nature is not necessary only in the operations rendered indispensable by disorders which threaten

\* Edin. Med. and Surg. Journal, April 1848, p. 496.

† London Med. Gaz., March 17, 1848.

‡ Dublin Medical Press, April 12, 1848.

§ Monthly Journal, April 1848, p. 740. (?) See Report on Materia Medica, p. 239.

|| Translated for the Medical Times by D. M'Carthy, D.M.P.

life. Autoplastic surgery must also have recourse to its resources: the region which requires reparation must be prepared, the substance or portion of skin to be displaced must be brought gradually by slow journeys, as it were, from its present seat to its future destination; in a word, some autoplastic operations of a dangerous nature may cease to be so if these principles be attended to.

Dr. Vidal illustrates his principle by the following instances:—

*a. Extraction of articular concretions.*—M. Goyraud admitted the principle when, for the purpose of extracting a loose cartilage from a joint, he did not complete his operation until he could rationally suppose the articular wound to have healed. The following was the operative process adopted:—The first part of the operation was accomplished according to the rules of subcutaneous operations, the skin being divided at some distance from the spot of the articular capsule which was to be opened, leaving an oblique passage between the wound of the skin and the capsular action. The loose cartilage was then forced out of the articular cavity through the opening of the capsule into the cellular tissue, and fixed there until the wounds were completely healed: thus the cartilage had become an extra-articular foreign body, the definitive removal of which was obtained by a simple operation unattended with peril. A small incision permitted its escape, and in five days the patient was completely restored. It was physically impossible for air to penetrate into the joint: during the first period, the foreign body opposed its passage; and in the second operation, the capsule was completely healed.

*b. Bronchotomy.*—In order to prevent hemorrhage into the trachea, M. Récamier recommends to divide all the tissues from the skin to the trachea, and to open that tube only twenty-four hours after. When it is recollected that tracheotomy is almost invariably an operation performed in urgent cases, time being of the utmost value, the principle cannot be applied in this instance.

*c. Incision of abscesses and cysts.*—Callisen had already conceived the idea of opening deep-seated abscesses in several successive operations, and M. Bégin established this notion as a precept. By the first operation, the surgeon should approach as near as possible to the purulent collection, and sometimes the remainder of the operation may be abandoned to Nature, who performs her part by an ulcerous process, hastened by the phlogosis which the first operation has induced. This method has been chiefly applied to the surgical treatment of hepatic abscess, and it is well known that M. Récamier opens certain cysts of the liver only after the application of caustic. The object of the first operation is to cause adhesions between the visceral and parietal layers of the peritoneum, in order that the abdominal wall may, as it were, become the wall of the abscess, and that effusion of pus into the serous cavity may be almost impossible. The second part of the operation is sometimes abandoned to Nature, who attains her end by ulcerations. Graves is of opinion that the surgical action should be always limited to the first operation. M. Bégin is of a contrary opinion; for the second operation the knife should be always preferred; for the first, opinions are divided—M. Récamier uses caustic, M. Bégin recommends the knife. The property of producing adhesions is attributed by the former to the caustic, and is the reason of his preference; but the inflammation produced by incision may certainly have the same result. Besides, the cause of the partiality for caustics is the consequence of two exaggerated fears—that of the patient, who, above all, dreads the incision; that of the surgeon, who exaggerates the difficulties of the operation. The caustic cannot be used with the same precision as the knife; and the time necessary for the elimination of the slough is gained if incision be preferred. Some operations seem, also, to exclude the application of caustic. Thus, in order to carry into execution the idea of M. Bégin and others, who, to create an artificial anus, according to Littré's method, recommend first that adhesions be established between the intestine and the abdominal wall, it is evident that it will be far preferable to divide in the first instance the abdominal walls, to acting blindly with a caustic, the action of which it is quite impossible to direct or to limit.

*d. Lithotomy.*—The idea of practising lithotomy in several successive operations is ancient. Franco looked upon this method as the best for the extraction of calculi. It was also mentioned by Covillard, Deschamps, Camperzoin, and Saucercotte. But the elder surgeons were in the habit of opening the bladder on the very first day, and removing the concretions at a later period; whereas, Dr. Vidal

recommends that the first operation do not extend to the bladder, which will be incised only when secondary inflammation has caused a sort of organic cement to be secreted around those parts which will, after operation, be in contact with urine. Infiltration, one of the great causes of the mortality in lithotomy, is thus prevented. M. Nélaton, M. Monod, and Professor Gerdy, have already performed lithotomy according to these principles, but the cases, in which many serious complications existed, sufficiently serious to prevent the idea of lithotomy or even of the usual operations for lithotomy being entertained, were not fortunate in their issue.

*e. Autoplastic operations.*—In these, Groefe and Professor Roux have found great advantage in employing the method *en plusieurs temps*. In ruptures of the perineum it will be found useful; and finally, by its adoption, operative surgery will attain the following results:—1. The great disturbances of the system will be avoided. 2. The modes of execution varied, and the resources of nature called into action. 3. Certain plastic operations, more perfect and less dangerous, will become possible; and 4, this question will be solved—Is it better to undergo several simple and short operations, unattended with peril, than submit to uncomplicated, long, and dangerous operations?

The works which have come to hand since our last Volume was published, contain many other articles having important bearings upon the general principles of surgical science and practice. Among the subjects of discussion, we find the following:

3. *On the Employment of Heat and Cold in Therapeutics, and the Application of Fluid Pressure.*—Indefatigable efforts are made by Dr. James Arnott to call the attention of the profession to this subject. He dwells emphatically upon what he believes to be the fact, that poultices and fomentations, cold lotions, bladders of ice, and similar applications, frequently produce effects the very opposite of those intended by the surgeon or physician, and as frequently do mischief rather than good. It is essential, Dr. Arnott remarks, for the effectual application of heat or cold in inflammatory or irritative diseases, that the appropriate temperature should be *uniformly preserved*, and his experience leads him to affirm that no judgment can be arrived at of the beneficial effects of definite degrees of heat or cold in various diseases, from the ordinary clumsy and ineffectual methods of their application. Dr. Arnott has invented a waterproof cushion or bladder, through which, by a most simple contrivance, *a current of water may be made to flow of any temperature that may be required*. The contrivance also admits of the addition of pressure—fluid pressure—to the regulated temperature. Its object is thus to apply cold continuously and uniformly in affections of the head or eyes, or after surgical operations, for instance; to employ, in the same way, heat, in inflammatory and spasmodic affections of the chest or abdomen; or to apply the equal and uniform pressure of water of any given temperature in eczema, for instance, and other cutaneous affections; or in the treatment of burns, wounds, certain ulcers, &c. Heat, Dr. Arnott observes further, communicated by poultices and fomentations, is too transitory and interrupted to be of much avail; and again, a series of reactions is frequently produced by the usual intermitting applications of cold, leading to excitement as the result, instead of depression.

Pressure on an irregular surface, by a bandage, will at best be confined to the projecting parts; the bandage, soon becoming distended by the motions of the patient, will cease acting on certain parts and be concentrated on others, causing either irritation or congestion. Dr. Arnott confidently hopes that his improved method of application will render fluid-pressure as a curative agent less dangerous, and more than doubly effectual, and that its use may be extended with advantage to diseases in which it has not hitherto been employed, in illustration of which, it is stated, that, by supporting the inflamed and distended vessels, and at the same time regulating the temperature, harassing diseases of the skin, which had resisted all the usual remedies, have met with a speedy cure. Dr. Arnott's views have been most favourably commented upon by several of the medical journals.\*

4. *On the Employment of the Power of Elasticity in Surgery*—Mr. Clark, surgeon to the Bristol Infirmary, has communicated a memoir on this subject. Without

\* London Med. Gaz., Jan. 8, 1846; Lancet, Dec. 4, 1847; Prov. Journal, Mar. 8, 1848.



denying that the rack and screw are powerful and necessary instruments, or aiming to discard their use, he states his belief, that there are numerous instances in which they are resorted to where the elastic principle would be more appropriate. Caoutchouc has been employed in surgery as a *compressor*. Mr. Clark suggests its use as a *tractor*, and estimates its power at a much higher rate than has hitherto been done. Its beneficial effects have been observed in—1, lateral curvature of the spine; 2, bending rigid joints, and straightening them when contracted; 3, the removal of long portions of dead bone from the soft parts, and withdrawing a sequestrum from its osseous shell; 4, the removal of ligatures, when they have been detained beyond the accustomed period; 5, opposing the tendency of cicatrices to contract after burns.\*

In the *arrest of bleeding* from leech bites, and even from arteries of tolerable size, such as the superficial volæ, and the superficial palmar arch, Mr. Vincent also advocates a resort to the principle of elasticity—the elasticity of the integuments. In the first place, he winds a very small piece of lint into a hard knot, so as to be less than a pea, and wiping the orifice quite clean of blood, and placing this little pad upon the bleeding point, then taking advantage of the elasticity of the integument, he draws a strip of adhesive plaster tightly over it. This has been quite enough to stop it perfectly, and on the third day there is an end of the wound. The point to be observed particularly in this application is, that the strip of plaster may be long enough to ensure a steady pressure of the pad by drawing up the integuments from a distance, by which the elastic quality of this structure gives a permanent pressure; but even this pressure should be confined as much as possible to the bleeding orifice.

The practice he adopts is to use a hard boss of lint, larger than that for leech-bites, but yet not more so than to cover fully the bleeding artery, to clear all coagulum away, and then press this boss upon the artery. As we are to get the elastic power of the integuments to keep up unremitted pressure, it will be necessary that this boss should have other pads placed over it when it lies below the level of the surrounding parts, in order that the pressure may take effect. But in this instance, there is no other application to be made, except upon this very spot over the artery; the rest of the wound ought not to be closed in, and no other covering except a piece of lint laid loosely on it; the lips of the wound are not to be brought together, nor is the pressure of bandages to be used. When suppuration has fairly taken place, no further bleeding will ensue, and the pressure may be taken off. Security has so certainly followed this plan of treatment, that he has the fullest confidence in it. Allowing the object to be fully obtained, it is a striking advantage over other methods that are usually had recourse to. All surgeons must have had the opportunity of seeing the difficulty and tediousness of securing the cut ends of the superficial palmar arch, and we know of the extraordinary propositions that have been followed out of tying both the radial and ulnar artery, for the purpose of stopping bleeding from the arch.

5. M. Trinquier, professor of medicine at Montpellier, in a letter "*On muscular Exercise considered as a Therapeutic Agent*," reminds his readers of the various causes of muscular contractions, and of the propriety of investigating these, with the view of determining whether any contraindication exists, or whether other curative measures may not be resorted to successfully, before operations are determined upon. Several examples of successful treatment are quoted from a pamphlet published by an English surgeon, Mr. W. T. Ward, in 1822. An individual having a contracted knee, from rheumatism of several years' standing, was made to walk on an inclined plane, and completely recovered the use of his limb in about seven months. In another more aggravated case, commencing with percussion, and proceeding gradually to the use of the inclined plane, in a few months the limb became straight, and the patient recovered its use. A false ankylosis in a gouty toe was cured in three months by frequently supporting the weight of the body on the toe. In another most aggravated case of contraction of almost all the joints in the body, in the person of an Indian officer, the same principle, with oily frictions, and the use of weights and pulleys, employed diligently for nine months, resulted in a very great improvement of the patient's condition.

\* *Prov. Med. and Surg. Journal*, Oct. 6, 1847.

† *Lib. cit.* p. 215.

An antero-posterior curvature of the spine was completely restored, the patient at the same time recovering his health. M. Trinquier gives a case, in his own practice, of wry-neck cured in a similar manner, without resorting to a section of the sterno-mastoid muscle. The conclusion to be arrived at is, that muscles which have been contracted for many years may be restored to their normal length by special exercises continued for a long period; and that the exercise of the muscles, at the same time that it produces extension of the flexors, gives tone to their antagonists, so that by the time the position of the limb is restored, its volume and force are found to be sufficient for the accomplishment of its functions.\* Mr. Vincent has also some original remarks on the surgical relations of associated muscular motion.†

6. *Galvanism as a Therapeutic Agent in Surgical Diseases* is still under the investigation of numerous scientific individuals in various countries. It has been well remarked, that it fell into disuse, in consequence of the deceptions and exaggerated statements of charlatans and enthusiasts shortly after its discovery, and that some other causes have been in operation to prevent the profession giving it a patient and sufficient trial—as the tediousness and presumed difficulty of its application; but the belief is most reasonable that an agent, which may be made to traverse directly, and almost at the will of the operator, the different parts of the nervous system, the action of which is instantaneous, and may be graduated and withdrawn according to the requirements of the practitioner, must exercise a powerful influence over the functions of the body, and admit of the most useful application in affections of the nervous system, of the blood, and of the various structures and organs of the body.

Numerous cases have been recorded in which galvano-puncture and the application of electricity in its various forms have been unsuccessfully applied, even in diseases in which its use is frequently indicated, which clearly shows that it is not a remedy to be employed with success indiscriminately, or empirically, and the proper train of scientific investigation at the present moment appears to be, to ascertain and define the cases in which it is capable of efficient application as well as its proper mode of application. In our late volume‡ we have recorded much of the information which has been obtained on these points, and in the works which have subsequently come to hand, we observe its application extended to other cases; in the Extracts of the present Volume the reader will find a case of ununited fracture treated successfully by galvanism (page 104), and “a case of subclavian aneurism cured by galvano-puncture” (page 107). We have now before us instances of the successful-employment of this agent in aneurisms, varices, diseases of the bones and bladder, in cases of paralysis—as for instance, “paralysis of the right side of the face—which had resisted all other remedies,”§ in rheumatism—as “in a case of severe and obstinate sciatica of several months’ standing, cured in fourteen days;”|| also, amongst others of a similar nature, “a cure of obstinate chronic rheumatism, by Mr. Christopher;”¶ and again, the utility of galvanism in a case of poisoning by opium, has been recently recorded,\*\* &c., &c. As respects rheumatic, neuralgic, and paralytic cases, many instances have been detailed in which it has failed, so that, as remarked by one of our continental contemporaries, although at present it is impossible to discriminate those cases which will give way to its effects from those which will not, when such affections resist the ordinary treatment, the application of galvanism is indicated.

7. The semi-annual period of our present Report embraces a new proposal for the advancement of medical and surgical knowledge, viz., that the members of the Provincial and Surgical Association should furnish to the profession through the medium of the “Medical and Surgical Journal,” the results of their experience on specified subjects, individuals being appointed by the Association to collect all the communications of the members on each subject, and to make reports thereon. The object is to render this Association and its valuable journal available for the

\* Revue Médico-Chirurgicale, Fev. 1848; and Practical Observations on Distortion of the Spine, &c., by W. T. Ward; London, 1822.

† Lib. cit., p. 1-13.

‡ Half-Yearly Abstract, vols. III., IV., V., VI.

§ Revue Med.-Chir. de Paris, Dec. 1847, p. 327.

|| Idem, p. 328, from the Gaz. Med. de Strasbourg.

¶ Lancet, Feb. 5, 1848, p. 152.

\*\* Prov. Medical and Surg. Journal, Nov. 3, 1847.

purpose of collecting information—to accumulate the observations and experience of members, and ultimately to reduce them to principles. The details of the plan are contained in a letter by Mr. Crompton, of Manchester, who is authorised by the Association to test its utility in an investigation of the “*Treatment of Burns and Scalds*.” Mr. Hunt, of Herne Bay, also has proposed a plan of his own for investigating the “*Medicinal Action and Effects of Arsenic*,” which the Association has authorised him to work out. It is scarcely necessary to remark, that these proposals, and the manner in which they have been met by the Association, are deserving of the highest commendation. The best method of carrying the object out may not at present be clearly ascertained, but the results must be highly interesting, and conducive to the interests of medical and surgical science.

### § I.—*Injuries and Diseases of the Arteries and Veins.*

8. *Deligation of the Carotid Arteries and of the Arteria Innominata.*—In our last Volume we referred to a paper by Dr. Norris upon this subject (p. 204), which we then were prevented reporting upon for want of space; and it is to be regretted that, for the same reason, we can furnish but an imperfect abstract upon the present occasion.\* Dr. Norris gives *six series of tables*, being the statistics of the mortality, accidents, &c., following these operations. And he states that close examination of the cases recorded shows that the operation of tying the carotid has been too generally looked upon as one of but comparatively little danger. Serious symptoms frequently follow the mere cutting off of the supply of blood to the brain, and fatal accidents are common results. Series I consists of 38 cases, in which the carotid has been tied for aneurisms. Series II, 30 cases for wounds, &c. Series III, 18 cases in extirpating tumours. Series IV, 6 cases in cerebral affections. Series V, 42 cases in erectile tumours, tumours of the diploe, jaw, maxillary sinus, and neck. Series VI, 15 cases of Brasdor's operation—in all, 149 cases.

a. *Aneurisms.*—22 recovered, and 16 died; 27 were males, and 11 females. Of 33 cases noted, 22 were on the right, and 11 on the left side. Of 34 cases noted, 4 were under 20 years old; 7, between 20 and 30; 8, between 30 and 40; 5, between 40 and 50; 3, between 50 and 60; 3, between 60 and 70. 33 were done for the cure of aneurisms; 1 for varicose aneurism; and 4 for tumours, afterwards discovered not to be aneurisms. In 13 cases the ligature came away before the 26th day; in 7, between the 20th and 30th; and in 1, on the 33d. In 9 cases, pulsation was noticed after the operation. Some of these cases are highly interesting. All the cases in which hemorrhage occurred after the operation, except 2, proved fatal. In 6 cases, the tumours suppurated, and either burst spontaneously, or were laid open; 4 died, and 2 were cured. Of the 16 fatal cases, 2 died from inflammation of the sac; 1, from inflammation of the brain; 5, from hemorrhage coming on from the 4th to the 70th days; 1, from spasm of the glottis; 2, from apoplexy and congestion of brain; 1, from exhaustion, and 4 were not noted. In 7 of the 38 cases, mistakes in diagnosis occurred: 1 tumour was a fungous hæmatodes; 1, a carcinoma; 1, tumour surrounding, but in no way connected with, the artery; 1, a glandular swelling; in 1, an aneurism was mistaken for an abscess; in another, also, the tumour was believed to have been originally a scrofulous abscess; and in 1, the aneurism followed a wound, and was seated in the vertebral artery. In 12 cases, serious symptoms were manifested in the brain after the operation.

The latter result of tying the carotids has been several times referred to in former Volumes of the “*Abstract*,” and is deserving of particular attention.† In the first case in which the operation was ever done for the cure of aneurism, paralysis of the arm and leg came on on the eighth day. Four days afterwards, the palsy of the arm had almost disappeared, and no further report concerning it is made. In another case, No. 4 of the series, there was great drowsiness on the third day, and on the following day the right side was much more feeble than the left. After some days these symptoms gradually disappeared. In No. 18 of the series, the patient became slightly

\* American Journal of the Medical Sciences, July 1847.

† Ibid. p. 27.



convulsed on the right side one hour and a half after the operation, and sunk into a state of stupor. Two days afterwards, his left side became paralysed. In No. 16, it is stated that "a few hours after the operation, symptoms of inflammation of the brain arose," but were subdued by the antiphlogistic treatment. In No. 37, apoplexy occurred on the morning of the day following the operation; from which the patient partially recovered, and lingered on for nine days after it. In No. 35, slight cerebral disturbance arose the day after the ligature; and on the fourth day there was paralysis of one side. In No. 17, dimness of vision, and a sense of coldness over the right side of the face, came on immediately after the operation, which gradually disappeared in a few hours, though for some days headache, difficulty of deglutition, and heaviness in the right side were complained of. In No. 20, the patient lost the use of the eye, and was affected with hardness of hearing. In No. 25, there were slight convulsions on the second day after the operation. In No. 9, giddiness, with numbness, and trembling of one arm, came on two hours after the operation: the numbness disappeared the day after. In No. 34, hemiplegia followed, which, it is stated, may have occurred at the moment of tying the ligature, but was not remarked until an hour or more after the operation, and the patient continued faint and hemiplegic till her death, on the fifth day. In No. 26, coma supervened on the night after the operation, and the patient soon after died. Of these twelve cases, seven died.

These cerebral symptoms were noticed at various intervals after the tying of the artery, and in all of them are attributable either to cutting off the direct supply of blood to the brain, or to disease consequent upon the altered condition of the circulation in that organ. It is impossible to determine what particular state of the vessels of the brain predisposes it to become diseased after obliteration of the carotid. The researches of Mr. Chevers lead him to think that in most instances the fatal mischief is consequent upon deficient arterial supply; but that in some cases it may arise from increased pressure of blood upon the arteries of the affected hemisphere, in consequence of the supply to the carotid being diverted through the vessels of the circle of Willis.

*b. Wounds.*—Of the 30 cases contained in this series, 15 were cured and 15 died. The ligature separated in 1 before the tenth day; in 9, between the tenth and twentieth days; in 3, between the twentieth and thirtieth days. Hemorrhage followed in 6 cases, of which 3 died: in 8 cases, derangement of the cerebral functions occurred, and 2 only of the 8 recovered. The cerebral effects included temporary and permanent disturbance of vision, loss of motion, followed by coma and death; headache and delirium, followed by stupor and death; complete insensibility, followed by recovery; hemiplegia, delirium, with convulsions on one side, and hemiplegia on the other side, &c. &c.

The following most instructive instance of a mistake, in regard to tying the artery, which occurred at the New York Hospital in 1840, is given:—The case was one of violent hemorrhage, arising from ulcerations towards the middle of the neck, in which it was determined to apply a ligature to the common carotid. An incision was made in the ordinary manner, on the inner side of the sternomastoid muscle; and in the usual situation of the sheath of the vessels, a large mass of fibrine was found, adhering to all the tissues in that region, and confounding them in such a manner that it was difficult to distinguish one from another. After careful dissection, what appeared to be the sheath of the vessel was exposed and divided. A cylindrical body, of the size and colour of the artery, was then brought into view, and a ligature passed under it. Several of the surgeons present, as well as the operator, felt the vessel under which the ligature was placed, and felt convinced that it was the carotid artery, although no distinct pulsation could be felt in it. This was attributed to the extreme prostration to which the patient was reduced. The ligature was then tied, without any effect in arresting the flow of blood. From this it seemed evident that the subclavian, or one of its branches, was wounded; but the patient was so prostrate, that it was not deemed safe to attempt any further operation. Firm pressure with the hand was, therefore, continued. Death occurred early on the following day. Upon post-mortem examination, the ligature was found to embrace only a band of organized lymph, situated immediately anterior to the sheath of the vessels, which were in a perfectly healthy condition. The hemorrhage was found to proceed from the inferior thyroid,

which was destroyed by ulceration in one half of its circumference for the space of an inch.\*

*c. Extirpation of Tumours.*—Of the 18 cases, 6 died, and 1 is stated to have been "recovering on the eighth day." In several, the most severe cerebral symptoms supervened. The ligaturing of the carotid, previous to the extirpation of tumours, unless there is reason to suppose that the tumour involves the artery itself, would seem to be an unnecessary step, inasmuch as pressure alone, if confided to a careful assistant, will as effectually guard against the danger from hemorrhage. It must be borne in mind that this preliminary measure is, in itself, a *dangerous* operation; and, as has been justly remarked by Mr. Chevers, it would be far better for the surgeon to make up his mind to contend with an active hemorrhage, than that he should submit his patient to the chance of fatal hemiplegia. The idea seems still to be entertained by some, that after such a step, the subsequent dissection of the tumour is nearly bloodless. The opinion is an erroneous one; the anastomosis being so free in the enlarged state of vessels which usually exist in these cases, as at times to pour out blood profusely. The difficulties and immediate danger of exposing the carotid vessel, too, in cases of large tumours, are not to be set down lightly.

Dr. Norris concludes, "as a preliminary step to these operations, the general experience of surgeons of the present day is decidedly against the proceeding."

*d. Cerebral Affections.*—The operation has been performed for the cure of epilepsy, paralysis and neuralgia; but the results, as given in detail by Dr. Norris, are very unfavourable. In several of the cases, both carotids were tied at intervals, without any benefit accruing; epileptic fits sometimes occurred the day after the operation; only momentary benefit was derived from it in a case of neuralgia, and in those cases in which it appeared to be advantageous. As remarked by Dr. Norris, quite as much, if not more benefit is daily seen to follow any well-directed treatment, and this without resort to means which endanger life. Indeed, as much benefit is likely to result from hygienic treatment alone.

*e. Erectile Tumours, &c.*—Of the 42 cases, 31 were for the cure of erectile tumours, or arterial varices, in the head or face; of which 18 were cured, 8 died, and 5 recovered without being cured. In the 11 cases in which the artery was tied, to cure or arrest the growth of other tumours, 5 died, 4 recovered of the operation, but were not cured, 1 is stated to have been cured, and 1 required to be extirpated with the knife and caustic afterwards. So that the method has frequently succeeded in the cure of purely erectile tumours; but for non-erectile growths in this region, the facts show that, when alone depended upon, it has proved altogether ineffectual, and cannot be countenanced by sound surgery. Of the whole 42 cases, 20 were cured, 13 died, and 9 recovered, but were not cured; in 10 cases of erectile tumours, more or less pulsation returned; in 6 cases, hemorrhage occurred, 4 of which died. Of the 13 cases of death, 1 was from ulceration of the tumour, 4 from hemorrhage, 1 from convulsions, 1 from inflammation of the brain, 1 from phlebitis of the internal jugular, 1 from lock jaw, 1 from inflammation of the chest, 2 from long-continued disease, and 1 from apoplexy. In 8 cases, very serious symptoms of affections of the brain were manifested.

*f. Brasdor's Operation.*—Of the 15 cases in which this was resorted to, 9 were done for aneurisms, or cases supposed to be such, of the innominate; of which 5 recovered, and 4 died; in 2, derangement of the cerebral functions followed the ligature. Dr. Norris dwells upon the difficulties of diagnosis in these cases, and gives instances from the practice of celebrated surgeons of mistakes having occurred.

*g. Ligature of both Carotids.*—Dr. Norris recites 10 instances in which a ligature has been applied to both carotids, for various diseases. This double operation was occasionally successful in curing the disease. Sometimes it failed in doing so, but the patients recovered; and it was in several instances followed by the usual cerebral effects. Two of these cases have been recorded in the "Half-Yearly Abstract," Vol. III., p. 112, and Vol. IV., p. 99.

*h. Ligature of the Arteria Innominate.*—Nine instances are given, which uni-

formly terminated in death; the fatal results occurring at variable intervals after the operation, generally from hemorrhage. In two cases, the carotid and subclavian have been tied immediately as they arise from the innominate, but were fatal. Three cases are recorded, in which attempts to secure the innominate have been actually made, and finally abandoned. Velpeau has formally proscribed the operation.

9. Among the more recent communications on the subject of aneurismal surgery, we find a case of *inguinal aneurism*, narrated by Mr. W. Lyon, of the Royal Infirmary, Glasgow, who tied the common iliac. The patient died fifty-four hours after the operation, apparently from shock. Also, a case of *aneurism of the arteria innominate*, which Mr. Lyon treated by compression on Brasdor's principle, with rest, bleeding, regulated diet, &c. The treatment appeared to be beneficial, life being prolonged for twenty months after the disease had made great progress; but the patient died suddenly and unexpectedly from copious hemorrhage into the right pleural cavity, a large rent having occurred in the aneurismal sac.\* Professor Syme relates a case of cystic tumour of the neck, which presented all the symptoms, and was mistaken for an aneurism; for which he put a *ligature on the carotid*. The patient died of secondary hemorrhage after a few days, and the true nature of the disease was revealed.† A case also of

10. *Ligature of the Common Carotid for Removal of the Parotid Gland*, by A. B. SHIPMAN, M. D., Professor of Surgery in Indiana Medical College, is communicated by Dr. Norris.—Mrs. —, æt. 70, of spare habit, but good general health, had a tumour at the angle of the jaw, of four years' standing, about the size of an orange, very hard, with lancinating pains through it. Previous to extirpation it was decided to tie the carotid, which was done by Dr. Shipman and Dr. Norman. At the commencement considerable hemorrhage attended, but the operation was finished, and the patient recovered; the wound healed, and the ligature came away on the twenty-eighth day. The patient was well one year from the operation, but the tumour returned again in the course of two years, and she finally sunk under it: but she recovered perfectly from the operation of tying the carotid. This was in May, 1844, and had never been reported before.‡

11. *Treatment of Teleangiectasy*.—Dr. Behrend, of Berlin, recommends, as superior to all other methods, cauterization with concentrated acetic acid, followed by the application of compresses soaked in vinegar. The erectile tumour is said to contract and to become hardened, pale yellow, and atrophied: an obliterating inflammation is produced which occasions coagulation of the blood in the vessels, with a thickening of the diseased part, so as to convert it into a tissue resembling parchment; a kind of eschar, which falls off, leaving the subjacent part quite dry. He recommends the subcutaneous division of the dilated vessels with a double-edged needle.§

Chelius and South give a full account of the various methods adopted for the cure of this affection; the former has a high opinion of caustic potash, where the swelling is broad and superficial: the latter has always removed the disease either with a ligature or knife;|| the use of acetic acid is not mentioned by these authors.

## § II.—Injuries and Diseases of the Head and Neck.

12. *Extirpation of the Lachrymal Gland*.—M. Paul Bernard performed this operation, and M. Textor, of Würzburg, has followed his example in a case of very intense epiphora. The case is fully described by M. Textor, junior, who observes that the operation is not more difficult in the living than in the dead body. Those who believe that the secretion of tears is effected by other organs besides the lachrymal gland, will doubt the utility of this measure; but in the case in question, although the eye continued moist, it was completely successful.\*||

13. *Excision of the Tonsils*,—a novel, simple, and efficacious mode of arresting

\* The Monthly Journal of Medical Science, Oct., 1847.

† Prov. Med. and Surg. Journal, March 8, 1848.

‡ The Medical Examiner, Sept., 1847, p. 559.

§ Journal für Kinderkrankheiten, and Encycl. Nouv., Nov., 1847.

|| System of Surgery, vol. ii. p. 279.

¶ Journal für Chirurgie und Augenheilkunde.



*hemorrhage from.*—M. Felix Hatin describes a case of hypertrophied tonsils, both of which he excised with the *guillotine* at one sitting. The hemorrhage was at first moderate, and subsided on the use of an acidulated gargle. Two hours afterwards he was summoned to the patient, who had vomited a large quantity of blood, and was believed to be dying; he found the floor inundated with blood, the patient pale and sinking. On examining the throat, the blood was found to flow from the wound produced by the excision of the left tonsil: a saturated solution of alum, alum-powder, and the free application of the nitrate of silver failed to arrest it: repeated vomiting of blood and faintings returned. Mr. Hatin feared the blood would find its way into the trachea, and he was about to apply the actual cautery, when a thought struck him, that having, in his surgical case, a pair of very long, straight forceps, intended to carry a ligature to a polypus at the posterior part of the nares, he might be able to compress the tonsil with these forceps and to arrest the hemorrhage. The extremity or one branch of the forceps was accordingly armed with pieces of agaric and linen, moistened with solution of alum, and the extremity of the other branch with pledgets of linen; the former was introduced into the month, and applied immediately on the bleeding surface, the latter passed naturally on the outside of the corresponding jaw, its extremity finding a point of support in the angle of the lower maxilla. For the purpose of compressing the tonsil it was only necessary to bring the branches of the forceps towards each other and tie them, which plan proved completely successful; the bleeding ceased immediately. On the following day there was slight tumefaction of the jaw, a little pain in the throat, and some fever. On the third day the forceps were loosened without using any force to separate the one which was inserted on the tonsil: and on the fourth day this fell off of itself without any return of the hemorrhage.\*

14. *Edema of the Glottis.*—Dr. W. Jameson is the author of an important paper entitled “Observations in (Edema of the Glottis, occasioned by the attempt to swallow boiling-water, illustrated by thirteen cases.”† In all these cases danger is imminent, although for a few hours the patient appears to suffer comparatively very little. Tracheotomy is imperatively called for when emetics, leeches, the application of heat, &c., fail in allaying the urgent symptoms. When the breathing becomes stridulous and croupy, or amounts to a mere pant, from the spasm of the glottis, the pulse being quick and small, the temperature of the body diminished, the head drawn back, the face congested, eyes half open, with inclination to coma and difficult deglutition—from the first accession of these symptoms—the operation is called for: but when they have lasted a sufficient length of time to cause complete coma, or if bronchitis or laryngitis has set in, then the operation will be useless. Dr. Jameson remarks very truly, that patients sometimes get well without any operation, and practitioners should bear this in mind so as to be guarded in their prognosis. We have heard it urged, in order to induce the friends to consent, that without an operation recovery would be *impossible*, they pertinaciously refusing on the ground that they had rather the patient died than that the throat should be opened—and after all the patient has recovered. When the surgeon proceeds to perform the operation, he should be provided with the following instruments: an ordinary scalpel, scissors, forceps and retractor, a trachea-pipe, a gum-elastic catheter, and a small double hook, the latter being a more convenient instrument for laying hold of the trachea than a single one or any other contrivance. The circumstances to be attended to in its performance are—

1st. The cutaneous incision to be in the median line, otherwise the opening into the trachea will be valvular.

2d. Great caution in avoiding the thyroid veins, which, as well as the middle thyroid artery, constantly encroach on the median line.

3d. Great caution that the incision be not carried too low in the neck, thereby opening the fascia that is attached to the sternum, which helps to close the upper opening of the thorax, whereby there is not only danger of wounding the vena innominata, but also great annoyance may be experienced by the elevation and depression of the thymus gland.

\* Rev. Méd. Chir. de Paris, Dec., 1847, p. 335. † Dublin Quart. Journ., Feb., 1848, p. 59.

4th. Never to open the trachea till we are certain that we have laid open the deep fascia that covers it, or we shall surely have a valvular opening.

5th. The operator should be prepared, in case of the supervention of spasm, when the trachea is seized by the hook, to cut the piece out rapidly; or should the patient not breathe instantly after this has been done, the surgeon must lose no time in passing a gum-elastic catheter into the trachea and inflating the lungs.

6th. Never enlarge the wound in the soft parts after the trachea has been opened lest a flow of blood should pass into it, and cause instant death.

7th. Blood may pass into the trachea the instant the opening is made, thereby producing violent cough, or even asphyxiating the patient. In either case the elastic catheter must be had recourse to, and life may be saved.

8th. Should a lymphatic gland present itself along the course of the incision, and tend to obstruct the passage of air into the trachea, it may be removed.

Immediately after the operation, as the patient is generally in a more or less collapsed state, we should give small doses of warm drink with hot jars around him, and have a warm temperature kept up in the room.

When reaction sets in, small and repeated doses of calomel, in combination with James's powder, ipecacuanha, or tartar emetic; if diarrhœa occurs, hydrargyrum cum cretâ, with Dover's powder, should be administered; or, if this will not check it, we may try small anodyne injections. But the principal danger to be dreaded, and which is chiefly to be guarded against and combated, is that arising from bronchitis, laryngitis, or pneumonia; and nothing is more likely to keep off their approach than inhaling a warm atmosphere, in conjunction with the use of calomel. If, however, any of these symptoms set in, they must be met by the ordinary measures used in such cases.

### § III—*Injuries and Diseases of Bones.*

One of the most valuable works which has ever issued from the press on the subject of fractures, by Dr. R. W. Smith, of Dublin, is now before us; we are given to understand that it is the result of the careful observation and continued labour of years. It embraces some of the most difficult points connected with the subject, which are handled in the most masterly style; it is eminently both philosophical and practical, and its general utility is greatly enhanced by numerous illustrations which convey to the reader, more effectually than any description in words could do, the nicer shades of difference presented to the view by some of the more obscure cases of injury to the bones in the vicinity of the joints. The substance of some of the more important chapters is summed up in several series of corollaries, which have been introduced into a former part of our present Volume (Art. 40, p. 80). We are induced, however, again to refer to the work, and to place before our readers some additional practical observations.

15. *Fractures of the Neck of the Femur.*—Mr. Smith's view of the value and diagnostic import of the two much disputed signs—shortening of the limb, and inversion or eversion of the foot, will be found in the article just referred to. He remarks that the surgeon who supposes the difficulties of diagnosis slight and easily overcome, can have but a very limited experience of such injuries; on the amount of shortening which occurs in the two varieties, the intra- and extra-capsular fracture, respecting which so remarkable a difference of opinion even now exists, he feels certain that the *degree* which immediately succeeds to the injury, may, with proper precautions, be considered as diagnostic of the *seat* of the fracture, this being *greater* when the lesion is external to, than when it is within, the capsular ligament. When the line of fracture, in intra-capsular fractures, is perpendicular to the axis of the neck of the bone, or when it has passed from the superior part of the corona of the head obliquely downwards and inwards, the inferior fragment is drawn upwards,—or at all events there is nothing to prevent its being so drawn upwards. But when the fracture runs from the inferior part of the corona obliquely downwards and outwards towards the summit of the trochanter major, then, if there be no displacement as regards the diameter of the bone, the ascent of the lower or external fragment is opposed by the superior, and the amount of shortening is less than in either of the other cases.

If the force that acts upon the neck of the femur be inconsiderable, the fibrous

membrane which encircles it—"the cervical ligament of the femur"—may escape uninjured, in which case the retraction of the limb will be inconsiderable, and will be at its minimum when the fracture has traversed the bone obliquely from the inferior part of the head downwards and outwards, as just now stated. The synovial and fibrous membrane remaining entire, may have the effect of keeping the fractured surfaces firmly together, and the limb may be thus secured from any change in length or position; or remaining entire on the anterior side, eversion may be wholly prevented, and again remaining entire on either side of the neck of the bone, shortening of the limb will be counteracted.

This author gives very cogent reasons against the assertion of Dupuytren, that the occurrence of shortening, at a period more or less remote from the receipt of the injury, as in an instance referred to by the surgeon of the Hôtel Dieu, in which, at the end of four months, it was said to take place *suddenly*, is attributable to the "yielding of the callus." Mr. Smith attributes the occurrence to the gradual process of absorption going on in the neck of the bone, though it might have escaped observation as long as the patient remained in bed with the limb inclosed in an extending apparatus. In the case here referred to, he doubts the fact of its having taken place *suddenly*. (p. 13.)

Mr. Smith has never seen an instance of fracture external to the capsule in which there was not shortening of the limb from the very moment of the occurrence of the accident;—there is in many instances a primary and immediate shortening; and the so called consecutive displacement is merely an increase in the amount of shortening already existing. His experience also leads him to deny that a fracture of the neck external to the capsule ever occurs without injury to the trochanter; these fractures are always in the first instance *impacted* fractures, and all impacted fractures are necessarily accompanied by a fracture traversing some part of the trochanteric region. In a hundred specimens examined, without a single exception, a second fracture was found in this region. This is the necessary result of the impaction of the broken cervix into the shaft of the femur, and occurs secondarily in the order of time. The forces in play, and the manner in which this complicated injury is produced, are admirably discussed (p. 17), the illustrative plates are most complete and instructive. They fully explain how it happens that the shortening is sometimes greater and sometimes less in the extra-capsular fracture.

From what has already been stated, it will be seen that Mr. Smith does not agree with those in opinion who maintain that the shortening of the limb is a symptom destitute of value in determining the seat of the injuries with respect to the capsule; cases, it is true, frequently occur, in which this symptom is not of itself sufficient to determine the question; but suppose a surgeon meets with a case in which the shortening does not exceed half an inch, he knows that this may indicate a fracture either within or without the capsule, but he also learns from it, that if the fracture be external, it is also an impacted fracture; he then examines further, and if he finds it impossible, or extremely difficult, to restore the limb to its natural length by extension, that he cannot elicit crepitus, that the loss of power is not as complete, or absolute, as in fracture within the capsule, he at once connects these symptoms with the slight degree of shortening, and from their union he forms the diagnosis of extracapsular impacted fracture of the neck of the femur.

Roget's diagnostic sign is rejected, viz, the direction of the force by which the fracture has been produced, as a means of arriving at a differential diagnosis as to the seat of the fracture.

As respects the difficulties of diagnosis in those comparatively rare cases in which decided and prominent *inversion* of the foot occurs, Mr. Smith, after stating that he regards them as being most frequently extracapsular fractures—in five cases out of seven this having proved to be their seat—proceeds to show that it is these cases which are specially liable to be confounded with luxations. Whenever the fractured portions of the trochanter can be brought into contact, a crepitus may be produced; but when, from the direction of the fracture, one portion of the trochanter has been drawn towards the great ischiatic notch, no crepitus may be discoverable; and a source of error will exist, from the resemblance of the fractured portion of the trochanter to the head of the femur; and if, with this circumstance, there should happen to be inversion of the limb, the difficulty of diagnosis will be in-



creased: but the presence of this inversion should never be allowed to embarrass our diagnosis—the facility with which the limb can be brought to its natural length by extension—the recurrence of the shortening when the extending force ceases to act—and the possibility of flexing the thigh upon the abdomen, establish the diagnosis between fracture external to the capsule and further displacement of one or both trochanters.

The inversion of the foot in these cases is not produced simply by muscular action, as taught by some surgeons. Mr. Smith states, that the deformity having been removed by extension, as soon as the force ceases to act, the limb is again shortened, but the foot will now be found to remain everted. There is no instance in which, under similar circumstances, a fracture will exhibit opposite characters; and, with Cruveilhier, Mr. Smith believes that the inversion is attributable to the *relative position of the fragments of the bone*, rather than to the influence of muscular contraction. In every instance of fracture of the neck of the femur, accompanied with inversion of the foot, which Mr. Smith has had an opportunity of examining after death, the inferior has been placed in front of the superior fragment, and the author makes the suggestion, that in this position, the direction of the fibres of certain muscles being changed, the inversion is produced secondarily by muscular influence, but the question is one still open to investigation. Turning to the pages of systematic writers for an account of the various causes to which the occasional inversion of the foot has been attributed by different surgeons, we find them given by Mr. South.\* The doctrine of “partial fracture” of the neck of the femur, as laid down by Mr. Colles, and also by Mr. Adams,† according to Mr. Smith, has not been established; in all the cases of supposed partial fracture external to the capsule, there has been unequivocal testimony of the existence of fracture of the trochanter; and they are all cases of the impacted and complete fracture, rather than of partial fracture of the cervix. With respect to partial fracture within the capsule, as described by Mr. Colles, Mr. Smith is manifestly sceptical; he is disposed to believe that some mistake has been committed, the exact nature of which, since the specimens cannot be found, it is now impossible to ascertain.

The question, whether osseous union ever takes place in fracture within the capsule, is assumed in this work to have been satisfactorily answered in the affirmative. Bony union is not effected through the medium of a provisional callus; but, as in some other instances in the animal economy, is effected by direct union of the broken surfaces confronted to each other. Mr. Bransby Cooper's opinions on this subject were placed before our readers in our Second Volume; these opinions are rejected by Mr. Smith. Eight cases are given in the text illustrative of the affirmative of the question, but on this part of the subject we may refer our readers to our former Reports.‡

15. *The Treatment of Fracture of the Neck of the Femur.*—Mr. Vincent has some philosophical views on this subject.§ The injury is so close to the centre of gravity of the whole body, that every slight movement must produce motion between the broken parts, but these motions are only likely to take place in actions where there is a movement forwards, as in the movements of the head and limbs, which are nearly all forward and backward; while, therefore, the patient is on his back, there is a continual interruption to the curative process; but, on the side, there are so few continuous lateral movements, and perhaps not one in which the movement is about the centre of gravity, that in this position there is the least possible interruption to the uniting process; the centre of gravity is directly over the injury, and the whole weight of the body presses on the bones, and keeps them in apposition. Mr. Vincent has treated cases by this method, and they have turned out much better in restoring the powers of the limb than the plan usually adopted. The lateral position requires that the thigh should be bent on the trunk, and the leg on the thigh. The position of placing the patient half on the side and half on the back is doing little. The sound hip should be vertically over the injured one. However, the fact is, that the age of the subjects of this accident compels us to adopt the position on the back, and the inclined plane, as it is only in this way the func-

\* Notes to Chelius, vol i. p. 565.

† Cyclopædia of Anatomy, art. “Abnormal Condition of the Hip Joint.”

‡ Report on Surgery, vol. ii. p. 201, and vol. iv. p. 226.

§ Lib. cit., p. 51.

tions of life, in the advanced stages, can be even tolerably well carried on. Moreover, as on the side the whole weight of the body is concentrated on the trochanter major, the chances of sloughing are much greater than when the pressure is spread over the large surface of the back.

The cases where the fracture takes place at the root of the trochanter, so that this process is still attached to the shaft of the femur, and the neck remains with the head, are not so common. The treatment of placing the patient on the side is the best, as it secures him from the jars and displacements that must occur when he is on his back; and as the cases are usually in individuals of less advanced age, as in the fracture of the actual neck, it can in general be adopted. In this injury the fracture unites well as to strength, but usually leaving the limb shortened; and if treated on the back, without great care, with the foot much turned out.

16. *Fracture of the Lower Extremity of the Radius*.—Mr. Smith has some valuable remarks on Colles's fracture. In the first place he has never seen it so high up as originally described by Dr. Colles; the most usual seat is from three quarters of an inch to an inch above the radio-carpal articulation; sometimes it is only a quarter of an inch above the joint, but he has never seen it higher than one inch; it always appears to be higher than it really is, but should the lesion of the bone take place at two inches or more above the joint, it no longer presents the peculiar and remarkable characters which distinguish the injury which has been designated after Dr. Colles. This particular fracture has also been described by many surgeons as an impacted fracture;\* Mr. Smith's reasons for dissenting from this opinion are given in our Extracts (Art. 40).

17. *Fractures of the Humerus*.—No surgeon can have been long in considerable practice without having met with difficulties in the diagnosis and treatment of injuries at the shoulder-joint. These injuries, so far as fracture is concerned, are most satisfactorily elucidated in Mr. Smith's work.† This surgeon defines clearly the fracture as seated at the *anatomical neck* of the bone, at the *line of junction* between the epiphysis and the shaft, and those which traverse the surgical head of the bone. The corollaries under this head in our present Extracts are well entitled to the attention of the practitioner. Instances are given of *fractures of the greater tuberosity*, one of which was inserted in our Fifth Volume (p. 79). The diagnosis of this particular case is laid down as follows: The acromion more prominent than natural, but the finger cannot be sunk into the glenoid cavity; no difficulty in approximating the arm to the side; the breadth of the joint greater, "nearly double" that of the opposite one; the existence of two tumours, the inner and larger placed under the coracoid process, and evidently constituted by the head of the humerus; the external and smaller apparently formed by the greater tuberosity, corresponding in situation to the glenoid cavity; these tumours separated by a deep and well-marked sulcus, following the direction of the bicipital groove.

At first sight the appearances resemble those of dislocation of the head of the bone forwards, but the facility with which the elbow can be brought to the side, and the great increase in the breadth of the joint, are sufficient to establish the differential diagnosis.

The *extracapsular* impacted fracture, occupying the situation which marks the junction of the epiphysis with the shaft, and accompanied by penetration of the superior by the inferior fragment, is extremely difficult of diagnosis; the principal points upon which this is to be formed are given in our Extracts: but in the text Mr. Smith further directs, that in order to form a decided opinion, let the surgeon, with both hands, grasp the head of the bone with firmness sufficient to maintain it as nearly as possible in a fixed position, while an assistant rotates the elbow, by which method, in a majority of cases, crepitus can be produced.

The diagnosis of the *intracapsular* impacted fracture, as compared with that of the extracapsular impacted fracture, is simple; this is the fracture which traverses the anatomical neck of the bone, in which the superior fragment is driven into the inferior fragment, one of the tubercles being usually broken off from the shaft; thus this particular fracture of the humerus is analogous to the *extracapsular* impacted fracture of the cervix femoris, while the former is analogous to the *intracapsular* impacted fracture of the latter bone.

\* Millar's Practice of Surgery, p. 313.

† Page 176.

In former Volumes the subject of bony union of intracapsular fractures of the cervix femoris has been laid in full before our readers; it is interesting to know the result of Mr. Smith's observations as respects this question in analogous fractures of the humerus. Mr. Smith states that, notwithstanding the unfavorable circumstances in which the bone is placed, as regards bony union, when a fracture has traversed the anatomical neck and there is no impaction, there is abundant evidence to prove that osseous consolidation may still be accomplished; but it is highly probable, where this fortunate result has occurred, the vascular communication between the fragment has not been entirely cut off, and that the margins of the fragments have remained here and there connected with each other, by the attachment of the capsular ligament; and the vascular supply derived from which proved adequate to the preservation of the vitality of the head of the bone. Bony union in the impacted form is much more certain in consequence of the impaction.

The impacted fracture always unites with a certain degree of deformity, and as regards the intracapsular variety, it would be imprudent to restore to the joint its natural form, since we should thus materially diminish the chance of osseous consolidation. In the treatment of such cases, it is therefore sufficient to bandage the arm to the side, and to support the forearm in a sling; but the prudent surgeon will never omit to announce to the patient that a certain degree of impairment of the motions of the joint will be a permanent result of the injury.\*

There are some other varieties of these injuries, and most important and interesting pathological and practical points, which we may have opportunities of referring to in future Volumes.

18. *Ununited Fractures; their treatment by a modified application of the Seton.*—After allusion to the irrationality of the methods by friction of the ends, of cutting down upon and sawing the ends, and the pressure of a seton between the ends of the ununited fragments, Mr. Francis Rynd publishes some cases in which a seton was applied successfully in the following manner. In an ununited fracture of the tibia and fibula, a curved seton-needle was passed into the inside of the leg, exactly opposite to the fracture, through the integuments, so deeply as nearly to touch the posterior internal edge of the tibia; it was then directed in a semicircular course anteriorly, over and close to the prominent extremities of the fractured bones, and was brought out on the outside of the limb, so that the fracture lay between the points of its entrance and exit; the seton not touching or passing between the fractured extremities of the bones. An ununited fracture of the humerus, of fourteen months' standing, was cured by this method; also a case of a ligamentous union of a fracture of the femur, of fifteen months' standing; also an ununited fracture of the patella was cured by the same method.†

19. *Badly-united Fracture.*—Mr. Rynd describes a very interesting case of deformity from a badly-united fracture of the bones of the leg, treated by resection of portions of the bones, and resulting in perfect recovery without deformity‡. An incision was made four inches in length, commencing two inches above the deformity, parallel to and behind the posterior edge of the fibula; this incision severed the connections of the soft parts with the bone in this direction; a similar incision was made along the posterior edge of the tibia. Those incisions were connected inferiorly by a transverse one in front, passing through the skin and integuments; the portion thus incised was dissected up, and formed a flap, which, being raised, exposed completely the deformed bones; a chain saw was then passed round the fibula, keeping close to it, in order to avoid the vessels, and the bone was sawed through above the deformed part, then below it, in a similar manner; the piece was firmly attached to the angular portion of the tibia, and so not easily removed; the deformed portion of the tibia was removed in a similar manner. The limb was then placed straight, the extremities of the bones in apposition, the flap was drawn down, it covered the whole wound, and was united by a few points of suture; the limb was placed in a case prepared for it, and the man put to bed; there was not a blood-vessel divided, nor was there an ounce of blood lost.

Profuse suppuration ensued; in the fourth week after the operation, erysipelas set in, which extended all over the leg to the knee; two days afterwards, mortification set in along the line of incision, and soon engaged the greater part of

\* Lib. cit., p. 191. † Dublin Quarterly Journal, Nov. 1847, p. 273. ‡ Ibid., p. 288.



the flap. At the termination of the seventh week after the operation, the aspect of the case was so bad that, after consultation, amputation was resolved on; the poor fellow begged for time, which was assented to; he struggled on, and, in little more than a month after this, a portion of the tibia exfoliated. He then began to get better, and, after nearly ten months' confinement, the cure was complete, his leg being straight and of the same length as the other. The patient's anxiety to have the deformity removed and the use of the limb restored, and the intolerable pain he suffered, were the circumstances which justified the operation.

20. Dr. Stark describes a "*Case of Dislocated Head of the Radius successfully reduced two years and one month after the occurrence of the dislocation.*" The author recites the opinions of Astley Cooper, Flanblatt, Marx, and others, that dislocation of ball-and-socket joints may be reduced at a much later period than those of hinge-joints, but limiting even the former to a few months, and that the latter become irreducible within a very short period after the accident. As the chief danger in reducing old dislocations is said to arise from the risk of rupturing the muscles, blood-vessels, or nerves by violent efforts at reduction, it was determined in this case to extend the arm firmly, but gently, day by day, till the new adhesions at the head of the radius were so much lengthened, or the head so loosened from its new site, that by the employment of not much additional force, the bone could at last be replaced. The extension was effected by seizing the hand of the patient with the right hand, bending the elbow-joint so that the forearm formed a right angle with the arm, and applying the counter-extension by pressing the left hand close above the elbow-joint, and thus fixing the humerus. The extension was continued until slight uneasiness was complained of. It was repeated daily for three weeks, when the head of the radius had become loosened, and could be pulled to the edge of the articular head of the humerus. When brought into the latter position, the ball of the thumb of the left hand was pressed against it, and bending the forearm on the arm, the bone quietly slipped into its place.\*

21. *Abscess of the Tibia*—Dr. Hutton publishes cases of this disease, from which it is to be inferred—that inflammation of the cancellated structure of the bone may occur without terminating in suppuration—that after suppuration a cavity is formed, lined by an organized membrane, and containing pus alone, or pus with small fragments of the cancellated structure—that in most cases the osseous walls become denser and thicker, and the medullary canal blocked up, but where spontaneous openings occur, there, of course, the walls are absorbed—that it is probable in most cases where the abscess heals, the cavity remains, secreting fluid, which is again absorbed—that the temporary variations in the swelling depend upon the condition of the soft parts, but the firm swelling, which slowly extends itself along the shaft of the bone, depends upon the enlargement of the bony structure—this *progressive* enlargement, taken with tensive pain, aggravated at intervals and not yielding to treatment, with impaired health, supplies a valuable means of diagnosis—that in abscess of the cancellated structure, the swelling and pain occupy the extremity of the bone, and, unlike necrosis, the periosteum is often not sensibly influenced at first. As respects treatment, spontaneous openings, when they happily occur, bring relief, and the surgeon should certainly hasten this consummation; and although in simple purulent abscesses small openings may suffice, it is generally judicious to make a free opening to clear the cavity of all *debris*, and the probability of large articulations in their vicinity becoming implicated, is an additional reason for promptly giving exit to the confined matter.†

#### § IV.—*Injuries and Diseases of the Urino-genital System, &c.*

22. *Lithotrity*.—M. Civiale has lately published a beautiful octavo volume on lithotrity, founded upon his unrivalled experience, his cases being reckoned by hundreds, and the mass of facts exceeding, perhaps, those contained in any other monograph in surgery. The work is entitled "*Traité Pratique et Historique de la Lithotrité*," and is divided into two parts, the first being an exposition of the *practice*, and the second of the *history* of lithotrity. The first part contains eight chapters.

\* Edinburgh Med. and Surg. Journ., Jan. 1848.

† The Dublin Quarterly Journal, Feb. 1848, p. 279.

- 1st. Of the instruments employed in lithotriety.
  - 2d. Of the operation.
  - 3d. Of the preparatory treatment.
  - 4th. Of the application of lithotriety to different cases, simple and complicated.
  - 5th. Of the after treatment.
  - 6th. Of the accidents from lithotriety.
  - 7th. Of the arrest of fragments in the urethra, and of urethral lithotriety.
  - 8th. Of the relapse of calculous affections after lithotriety.
- The historical part is divided into three sections.
- 1st. Indications, more or less vague, of lithotriety before 1817.
  - 2d. Origin and development of lithotriety in France.
  - 3d. Sequel of the development of lithotriety in France and other countries.

On the 17th of August M. Civiale read a paper at the Academy, "*Appréciation des Résultats de la Taille à l'Aide des procédés de la Statistique.*" He collected 5875 of the most authentic cases of lithotomy; among which there were 1221 deaths, or 1 in 481, and he arrived at the conclusion—1st, That lithotriety skillfully performed, and limited to suitable cases, saves 96 to 98 of every hundred patients. 2d. That a fourth of the cases rebellious to lithotriety may be subjected to lithotomy. 3d. That by lithotomy applied exclusively, and without distinction of age, from 20 to 30 per cent. are lost. 4th. That applied to children only, lithotomy saves nine-tenths. 5th. That applied to adults and old persons, it saves from 50 to 75 per cent.

23. *Spermatorrhœa*.—Mr. H. J. M'Dougall has furnished the profession in this country with a translation of Professor Lallemand's well-known work on this subject. The opinions and practice of the French surgeon have been so generally promulgated, that it is quite unnecessary to recite them at this late period; but we submit Mr. Phillips' practical remarks on the same subject to the consideration of our readers. (Ext. Art. 67, p. 114.)

The translator thinks that involuntary seminal discharges are little understood by the profession in this country, and he remarks truly that attention to them has been too generally avoided by regularly educated practitioners. In his preface he refers to the papers published by Mr. Phillips, in the "*Medical Gazette*," in 1843; also to contributions by Dr. Ranking, Dr. Dangerfield, and Messrs. Ryan, Chatto, Dudgeon, Curling, and Dr. Smyth, interspersed with various publications, as the sum of the literature of the subject in this country. In oral lectures and in the text-books of surgery, the subject is, by common consent, omitted. Professor Miller's "*Practical Surgery*," published in 1846, which contains a short notice on spermatorrhœa, is mentioned as the only exception. Mr. M'Dougall considers epilepsy as a symptom of spermatorrhœa, produced by masturbation; he refers to two uncomplicated cases of epilepsy following masturbation; in which, after the practice had been arrested, the effect ceased; and he considers it a question of considerable importance whether the paroxysm may be kept up by involuntary discharges, after having been once excited in the manner referred to. Mr. M'Dougall also regards as another symptom of spermatorrhœa the occurrence of urethral discharge from very slight excitement, frequently giving rise to the unfounded suspicion of the existence of gonorrhœa. He is a disciple of Lallemand's, as respects the utility of the application of the solid nitrate of silver.

Mr. Phillips, to whose paper we again refer our readers, has considerably modified the opinions which he formerly expressed. Without denying that a process of absorption may take place in the vesiculæ seminales, he believes that a natural necessity exists for the excretion of the seminal fluid accumulated in these reservoirs. In some cases relief is obtained spontaneously; in others voluntarily, either by masturbation or sexual intercourse. The relief does not occur, in some cases, oftener than is consistent with health, whilst in others it happens so frequently as to interfere very seriously with the general health; but he is satisfied that in a majority of cases, where the health becomes affected, the discharges have not been involuntary at all. In 463 cases, in which he has been consulted, Mr. Phillips states that the discharge did not occur more frequently than was necessary to relieve the distended seminal vesicles, although, in most of them, the usual effects were painfully exhibited. The discharge in these cases is not usually frequent, and may continue for a long time without damage to the constitution,

although there is always a risk that permanent irritation may be set up. The reader will at once perceive that Mr. Phillips places his reliance, in the treatment of these cases, on regulated and habitual sexual intercourse.

24. *Aphthæ of the Lower Part of the Large Intestine, commonly called Fissures.*—In a letter to M. Bretonneau,\* M. Miquel maintains, in the first place, that fissures are always the result of small ulcerations, analogous to the aphthæ of mucous membranes generally; that spasm of the sphincters is always the effect and not the cause; that the irritation or disturbance continually produced by defecation perpetuates the affection; and, finally, that it is sufficient to change the character of the ulcer to cause the spasm to cease; that energetic astringents will effect this, and that an operation is required in a very small number of cases. During the employment of rhatany, or nitrate of silver, it is necessary to resort to oily and emollient enemata, for the purpose of keeping the bowels free, and preventing the fæces becoming solid. During the treatment a vegetable diet is to be preferred.

25. *Operation for Internal Hemorrhoids.*—Professor Riberi, of Turin,† seizes the base of the tumour, however high it may be placed, with a curved, pointed hook, or tenaculum, and draws it downwards; he then passes a second curved tenaculum through the base, at right angles to the first; the convexity of the curve of the instruments being directed upwards, and their points outwards from the anus. The two instruments are held by an assistant, a ligature passed behind them, and the tumour strangulated, after which the instruments are gently withdrawn. One extremity of the ligature is cut short, and the tumour returned into the rectum without puncturing it. A feeling of numbness is felt by the patient after the operation, to be alleviated by an injection of cold water. The ligatures separate about the third or fourth day, and the cure is complete from the twelfth to the twentieth. The operation has been uniformly successful in M. Riberi's hands.

#### § V.—Aural Surgery.

In the "Archives Générales,"‡ an account is given of some important statistical researches of diseases of the ear by Dr. Kramer of Berlin, the materials having been drawn from the most attentive examination of 2000 cases. The results are recorded in a journal, which comprises the name, age, and place of residence of the patient, the date of the attack, the causes of the disease, the existence or absence of tinnitus aurium, and other symptoms, the auditory power of each ear, the treatment pursued by the patient before applying, and that prescribed by the author, the duration of the disease, and its consequences. The results are arranged in 19 tables, and the 2000 cases consist of the following:

Diseases of the auricle . . . . .	5 or $\frac{1}{400}$
" external auditory canal . . . . .	281 or $\frac{1}{7}$
" membrane of the tympanum . . . . .	442 or $\frac{1}{4\frac{1}{2}}$
" middle ear . . . . .	198 or $\frac{1}{10}$
Nervous deafness . . . . .	1028 or $\frac{1}{2}$
Dumb deafness . . . . .	46 or $\frac{1}{43}$
	<hr/>
	2000
1st. <i>Diseases of the Auricle.</i>	
Hypertrophy and induration . . . . .	3
Erysipelas . . . . .	1
Abscess . . . . .	1
	<hr/>
	5
2d. <i>Diseases of the External Auditory Canal.</i>	
Accumulations of wax from erythematous inflammation of the lining membrane . . . . .	213
Catarrhal inflammation . . . . .	51

\* Revue Médico-Chirurgicale, Feb. 1848, p. 85.

† Giornale dell' Accademia Medico-Chirurgica di Torino.

‡ Nov. 1847; p. 335, from Beitrage zur Ohrenkeilkunde.



Phlegmonous inflammation . . . . .	9
Periostitis with caries . . . . .	8
	<hr/>
	281
3d. <i>Diseases of the Membrane of the Tympanum.</i>	
Acute inflammation . . . . .	45
Chronic inflammation . . . . .	397
	<hr/>
	442
4th. <i>Diseases of the Middle Ear.</i>	
Catarrhal inflammation of the mucous membrane with accumu- lation of mucus . . . . .	164
Inflammation, with contraction of the Eustachian tube . . . . .	28
Obliteration of the Eustachian tube . . . . .	2
Inflammation, with abscess of the cavity of the tympanum . . . . .	4
	<hr/>
	198

The catarrhal, phlegmonous, and periosteal inflammations of the auditory canal were attended with running from the ear, but these constituted only one-seventh of the cases of running. Of 510 cases of discharge, about six-sevenths depended upon inflammation of the membrane of the tympanum. Nearly one-fourth of all the cases of deafness met with are caused by inflammation of the membrane of the tympanum, or its consequences, and in general the auditory canal does not participate in this inflammation. The great frequency of catarrhal inflammation of the middle ear depends upon its proximity to the nasal fossæ and throat, which are so frequently the seat of catarrhal inflammation; for instance, a slight deafness is frequently observed in an ordinary coryza, which usually disappears with the catarrh, and is then most probably dependent upon the orifice of the Eustachian tube being affected, and rarely the cavity of the tympanum.

When one ear is affected with a discharge, the practitioner should never fail to examine with attention the auditory power and the organic condition of both ears, for a discharge may be too thick or in too small a quantity to make its way externally, and the patient's statement should never be trusted, for he frequently believes that the hearing is perfectly good, when on investigation it is found to be only a little less imperfect on one side than on the other. Of the 2000 cases, 1639 were cases affecting both ears, and 361 only were single affections. Dr. Kramer observed, in all the cases of phlegmonous inflammation of the meatus externus, one side only was affected, and that catarrhal and periosteal inflammation was much more frequently single than double. Of the cases of nervous deafness, 984 were double, and 44 single, or twenty-two to one.

Acute inflammation of the membrane of the tympanum rarely passes into a chronic state, as may be inferred from the extreme relative frequency of the latter. Mr. Wilde,\* of Dublin, who has paid great attention to the subject, states, on the contrary, that the appearances of chronic inflammation of the drum are to be found as the sequelæ of all the other forms of inflammation, just as chronic succeeds to acute ophthalmia. As respects the complications of diseases of the ears in the same individual, Dr. Kramer found 38 cases only, where, one ear being affected, there was more than one disease, and 66 cases where, both ears being affected, there was more than one disease. The most remarkable complications were,—

1. Accumulation of wax in the auditory canal on one side, and nervous deafness in the other (5 cases).
2. Chronic inflammation of the membrane of the tympanum on one side, and accumulation of mucus in the middle ear (10 cases); or nervous deafness (18 cases) in the other. Also, united in the same ear—
1. Accumulation of wax in the auditory canal, and of mucus in the middle ear.
2. Accumulation of wax, with nervous deafness. In general, however, in nervous deafness, the secretion of wax, as well as the mucous secretion of the middle ear, are decidedly diminished.
3. Catarrhal inflammation of the auditory canal, and a certain degree of inflammation of the membrana tympani, without any tend-

\* Dublin Quarterly Journal, Feb. 1848.

ency in this inflammation to terminate in suppuration, ulceration, or any other change of texture.

In 305 cases of chronic inflammation of the membrane of the tympanum, with perforation, internal otitis occurred only six times; when perforation did not occur, an accumulation of mucus in the internal ear never presented itself. In this inflammation the reappearance of wax should be considered a good sign, as it indicates the cessation of the chronic inflammation.

Inflammation of the mucous membrane of the tympanum neither extends to the tympanum itself nor to the labyrinth; as soon as the mucus is evacuated the hearing is restored. Dr. Kramer was certain that in 164 cases of this nature the membrana tympani remained perfectly healthy.

For the purpose of *diagnosis* in diseases of the external auditory canal and of the membrana tympani, it is necessary to employ the *speculum auris*. Two thirds of the diseases of the ears have their seat beyond the field of observation, and in those of the middle or internal ear, catheterism of the Eustachian tube is of the greatest moment; it is here that the *tactus crudilus* and a fine sense of hearing constitutes the superiority of the experienced practitioner. By the ear especially he may appreciate the nature of the *bruit* which the air produces in penetrating into the cavity of the tympanum. The ear cannot furnish indications so certainly as the sight, but this is no reason for rejecting its assistance, and Dr. Kramer concludes that it is impossible to treat these affections properly without the aid both of the speculum and of the catheter: catheterism being performed in various ways.

Dr. Kramer considers the ticking of a watch the best term of comparison of the power of hearing in different diseases of the ear. A good ear will perceive this at a distance of 30 feet. Individuals who do not hear a watch tick when applied directly to the ear, cannot hear what a person says when speaking loudly and very close to the ear. The sense of hearing is a little better when the watch is heard by direct contact; but it is only when the patient can hear the tick at a distance of several inches, and especially several feet, that he can follow up a conversation. It is worthy of remark, that the susceptibility in the ear to perceive the human voice is not always in relation with the susceptibility to perceive the tick of a watch; it may be more or less susceptible as respects the one or other of these sounds.

The general result of an examination of the power of hearing in 3639 cases of diseased ears is, that in all diseases of the external auditory canal, of the membrane of the tympanum, and of the middle and external ear, deafness may proceed to a great extent; but it is especially in affections of the internal ear that it is most frequent and most complete.

In chronic inflammation of the membrana tympani, the general limit of the auditory power is from one to three feet (one foot in half the cases and three feet in one-sixth of the cases). With organic alterations of the membrane, to all appearance analogous, the deafness may vary to a very great extent; and reciprocally, with great differences in the state of the membrane we may find divers degrees of deafness. This kind of contrariety is very frequent where a perforation of the tympanum exists, and is explained by the impracticability of recognising the changes, independent of the perforation, which may have been produced in the parts inclosed in the cavity of the tympanum.

Whenever in this case the patient cannot hear the watch, or hears it only at a very short distance, there is but little hope of re-establishing the hearing, although the inflammation be suspended; the prognostic is a little more favourable when the auditory power extends to several inches.

When the membrane was perforated in this affection, which occurred in 217 patients and in 305 ears, deafness was complete in 50 cases, the power of hearing extended to one inch in 80, to one foot in 113, to three feet in 50, more than three in 9, and to a considerable distance in 3. In 180 patients and 353 ears, where perforation had not taken place, deafness was complete in 42 cases: hearing extended to an inch in 88, to one foot in 148, to three feet in 51, to more than three feet in 19, and indeterminate in 11. Complete deafness was proportionally more frequent as the perforation was of *small* dimensions, but hearing was much more frequently preserved intact when there was no perforation, so that little advantage could result from perforating the membrane of the tympanum. If, however, it should

be deemed expedient in any cases to resort to this operation, the opening should be made rather large, since the hearing suffers much less from a large than from a small opening; but it is important to remark that if *very* large (the size of a lentil), the auditory power which remains does not extend so far as where the opening is smaller. The hearing was not completely preserved in any case of perforation, although in the most favourable cases, the patient could sustain a conversation with ease, so that a superficial observer might imagine that a partial destruction of the membrane is consistent with perfection of hearing.

In 676 ears affected with chronic inflammation of the tympanum, scarcely one in three was so affected independent of polypus or perforation: in more than two-thirds, the membrane was perforated or covered with polypous vegetation; the two affections being united in 37 cases. Six-sevenths of the discharges from the ears depended upon chronic inflammation, with perforation or polypus.

Tinnitus aurium existed in 117 out of 305 cases of perforation. In the 2000 cases it was observable in 1267; there was no trace of it in the deaf and dumb. In accumulation of wax in the meatus, acute inflammation of the membrane of the tympanum, and nervous deafness, it existed in three out of four cases; in catarrhal inflammation of the meatus, in phlegmonous inflammation of the same, internal otitis, and accumulation of mucus in the tympanum, it was as frequently absent as present; in chronic inflammation of the membrane of the tympanum, it was absent in two cases out of three.

Kramer's researches have led him to the conclusion, that tinnitus aurium is valueless as a symptom, it is rarely met with without some affection of the auditory power; but all its varieties accompany indiscriminately all the diseases of the ear, and every variety of disease may run through its whole course without presenting a trace of it, and without any obvious reason for its presence or its absence. Mr. Wilde, however, thinks it more than probable that a knowledge of the peculiarities of this symptom may yet be found to assist in the diagnosis of particular forms of deafness.\*

Of all the diseases of the ear, according to Kramer, three only can be regarded as having an acute character, viz. erysipelas of the auricle, acute inflammation of the membrane of the tympanum, and phlegmonous inflammation of the lining membrane of the auditory canal.

Caries of the auditory canal occurs before ten years of age, and is generally dependent upon the scrofulous diathesis; acute inflammation of the membrane of the tympanum occurs from 20 to 40 years of age, and is independent of diathesis; and chronic inflammation of the same membrane is always connected with the scrofulous diathesis; two-thirds of the cases occurred between the ages of one and ten years, and chiefly during the first two years, as a sequel to exanthema, and were chronic from the beginning.

Nervous deafness generally comes on very insidiously, being most frequently developed from 20 to 30 years of age, after the application of cold, or moral affections. It rarely occurs before 10 or after 60 years of age. It first affects one ear and makes slow progress, not attacking the other until the lapse of a considerable period.

Among the 2000 patients treated by Kramer, more than four-fifths had always enjoyed good health, the disease being purely local, and local treatment alone was employed. In the remaining fifth there were complications, the most frequent being general nervous debility, coinciding almost exclusively with nervous deafness, and never with inflammation of the mucous membrane of the middle ear.

Inflammation of the mucous membrane of the tympanum is frequently connected with scrofula and catarrh; the catarrhal affection may exist with nervous deafness, but this is rare.

Nothing is more difficult than to determine the causes of diseases of the ear; their origin is frequently unperceived, since there is rarely pain and deafness; a running or tinnitus aurium alone excites attention, although the affection may have commenced long previously. Of the 2000 cases, in 1109 the causes were totally unknown. Cold appeared to be the most common cause of acute inflammation of the membrane of the tympanum, and of phlegmonous inflammation of the ex-

\* The Dublin Quarterly Journal, March 1847.



ternal auditory canal; also a common cause of that inflammation which produces an accumulation of mucus in the middle ear and of the erythematous inflammation, which occasions an accumulation of wax in the meatus, and of inflammation of the glands of this latter canal. Nervous deafness and chronic inflammation of the membrane of the tympanum also frequently have their origin in cold.

Exanthems, especially scarlet fever, and other diseases of the skin, frequently occasion chronic inflammation of the membrane of the tympanum. Nervous and gastric fevers frequently occasion the same disease, and also nervous deafness; in two cases, gastric fever produced accumulation of mucus in the middle ear. Blows on the ear produced, in 3 cases, glandular inflammation of the canal; in 12, chronic inflammation of the membrane of the tympanum; and in 24, nervous deafness. This deafness may occur instantaneously in consequence of a physical lesion of the head or spine. Nervous deafness is frequently a consequence of violent chagrin, intense toothache, abundant hemorrhage, or the concussion caused by a very violent noise; it also appears to occur, under some hereditary influence, in one case in six.

Small-pox is the disease which destroys, most frequently, and to the greatest extent, the membrane of the tympanum, from chronic inflammation, but confined to one side; measles more frequently leads to perforation on both sides, and scarlatina and cold, although still very powerful causes, have less disastrous results.

Relative to curability, Kramer arranges diseases of the ear into four groups—1st, diseases certainly curable; 2d, diseases in which a cure is probable; 3d, diseases susceptible of amelioration only; 4th, incurable diseases.

1st. Among diseases certainly curable, whatever be their duration, degree, and the negligence with which they may have been treated, are placed erysipelas of the auricle, furuncles, accumulations of wax, catarrhal and phlegmonous inflammation of the auditory canal, acute inflammations of the membrane of the tympanum, and catarrh, with accumulation of mucus in the middle ear. The tegumentous erysipelas of the membrane, which leads to accumulation of wax and of epidormic layers, readily subsides, and when the passage is cleared of the foreign bodies, the patient is immediately relieved. Catarrh and inflammation of the skin and glands give way to saturnine injections, revulsives, and purgatives. When complicated with dartrous and scrofulous affections, general treatment is required, and months may be necessary to effect a cure. Phlegmonous inflammation, if not arrested with leeches, passes rapidly to suppuration; as soon as the abscess is opened, all the symptoms disappear, although the swelling may remain for some time, and occasion inconvenience. Acute inflammation of the membrane of the tympanum generally subsides in a few days, by leeching, revulsives, and injections. Inflammation of the middle ear, with accumulation of mucus, terminates in a cure by aid of those measures intended to expel the mucus and restore the membrane to its healthy secreting power, particularly by the use of the catheter and the air douche. In recent cases it is sufficient to blow through the catheter; when, however, the mucus has become viscid, only a temporary relief is obtained by this means. Dr. Kramer then employs the air douche, and he remarks, that the cold air gives tone to the membrane; to the local means, when there is a particular diathesis, and in particular scrofula, general treatment and an appropriate regimen must be added.

2d. Among the diseases, the cure of which is probable, are arranged—eczema of the auricle, periostitis with caries of the external auditory canal, chronic inflammation of the membrane of the tympanum, retraction of the Eustachian tube, nervous deafness. The chronic inflammation of the membrane of the tympanum is frequently connected with a general dyscrasy, and the chances of cure depend upon our power of action upon the constitution, and upon the extent of organic mischief to the membrane. The membrane being considerably thickened, or perforated to a considerable extent, cannot be restored to its normal structure. Polypous vegetation may, in general, be removed, unless large, flat, and sessile; but since the membrane is at the same time hypertrophied and perforated, their removal can have but little effect. Dr. Kramer adds, if we consider that in half the cases of chronic inflammation this membrane is perforated, and in a quarter of the cases there are polypous excrescences, we may regard as successful treatment the cure of  $\frac{1}{4}$ th of the cases; and the amelioration, more or less, of  $\frac{1}{4}$ ths,

that is to say, by lessening the suppuration and improving the hearing; in  $\frac{2}{4}$ ths there being no improvement.

Contraction of the Eustachian tube presents fewer chances of successful treatment than chronic inflammation of the membrane of the tympanum; in both cases the want of success arises chiefly from the prominence of the organic changes. Similar causes oppose the cure of *nervous deafness*, whenever the vitality of the auditory nerves has greatly suffered. In fact, these nerves have not only a diminished susceptibility to sonorous impressions, but also a morbid susceptibility to impressions of all kinds, which augments with the progress of the disease; hence the difficulty, and even the impossibility, of finding appropriate remedies, capable of acting upon the auditory nerves without injuring them. In 271 cases the patients could not tolerate any treatment, although they appeared to be in the most favourable state, as respects age and the degree of deafness. In 703 cases, hearing was improved, or the tinnitus aurium was diminished or suspended, in various degrees, by treatment. In 54 cases only, a complete cure was obtained. In the treatment, Dr. Kramer always has recourse to stimulating vapours, especially of distilled water, assafoetida, musk, and bitter almonds; he rarely employs any general treatment, and he has remarked that it rarely happens that any improvement is produced in nervous deafness by general remedies, although they may sometimes be useful before having recourse to local treatment, in order to re-establish the general health, if deteriorated.

3d Among the diseases susceptible of amelioration only, the author places internal otitis, a disease the resolution of which may occur in rare cases, but which, in most cases, entails, independent of the destruction of the organ, real danger to life.

4th. The incurable diseases are only the obliteration of the Eustachian tube and deaf-dumbness.

Finally, Dr. Kramer is satisfied that an electro-magnetic current is a powerful stimulant of the organs of hearing, principally when directed from the inferior orifice of the Eustachian tube, towards the external auditory canal of the same side. This stimulant action manifests itself by convulsive titillation, and pains in the ear, with a temporary augmentation of the power of hearing, which is generally not of long duration; and also by the augmentation, at the time, or shortly after the operation, of the tinnitus aurium. It requires great prudence in its employment, and must be abandoned if the tinnitus aurium increases in a marked degree, without a favourable change in the power of hearing. Electro-magnetism is useful to verify the existence of nervous deafness.

—A very lengthy and most excellent article, to which we have already referred, "*On the Inflammatory Affection of the Membrana Tympani and Middle Ear*," will be found in the "Dublin Quarterly Journal," by W. R. Wilde, Esq. Mr. Wilde regrets that the modern systems of surgery contain but scanty information on diseases of the ear, and entertains the opinion that, if they were as well studied or understood by the generality of practitioners, and as early treated, as the diseases of the eye, they would be found just as much within the pale of scientific treatment. A minute description is given of the proper method of the examination of the ear, of the most convenient instruments to be employed, and of the appearances presented in health by the *membrana tympani*.

*Myringitis* is the designation adopted for the inflammation of this membrane, and inflammation of the middle ear is included under the same term, because the author does not believe it possible for one to exist independent of the other, for any length of time; no more than an ophthalmia can be circumscribed. Experience has proved to Mr. Wilde that the instances of "*nervous deafness*," that is to say, of deafness with *perfectly healthy* tympanical membranes, are comparatively few, but in such cases there are a variety of pathological appearances which he is fully convinced are the result of different forms of acute and chronic inflammation. In Dr. Kramer's work all the diseases of the *membrana tympani* are associated with those of the external ear; in Mr. Wilde's opinion, they belong equally, if not more, to those of the internal ear; chronic as well as acute inflammation of the membrane is accompanied with disease of the middle ear more frequently than disease of the auditory passage. Mr. Wilde shows the extreme probability, from analogy, that the 164 cases of inflammation of the mucous membrane of the

middle ear, included in Dr. Kramer's 2000 cases, extending over the membrane at the back of the membrana tympani, as inflammation extends over the aqueous membrane lining the back of the cornea; and other remarks tend to show that Dr. Kramer has been led into error by his favourite theory of "nervous deafness."<sup>27</sup> Mr. Wilde does not think it reasonable that 1028 of 2000 cases are properly attributable to an affection of the auditory nerve, since the most which can be said is, that in these cases the part capable of inspection exhibits no symptoms. In corroboration of this view, Mr. Wilde gives the following table of 708 cases of aural disease, registered at St. Mark's Hospital during three years, in which the proportion of cases of nervous deafness is, in round numbers, only one in five:—

DISEASES.	AGES AND SEXES.										
	under 5		6—15		16—30		31 and up.		TOTAL.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Gen. Total.
Otitis . . . . .	3	1	9	3	8	6	9	8	29	18	47
Acute Myringitis . . . . .	—	2	4	5	10	9	4	5	18	21	39
Chronic Myringitis . . . . .	—	1	8	6	15	15	20	17	43	39	82
Abscess in Membrana Tympani . . . . .	—	—	1	—	—	—	1	—	2	—	2
Granular Membrana Tympani . . . . .	—	—	—	—	1	1	2	1	3	2	5
Collapse of ditto . . . . .	—	—	1	1	1	1	1	5	3	7	10
Otorrhœa . . . . .	13	8	39	38	31	37	10	9	93	92	185
Do. with Polypus . . . . .	—	—	7	5	6	3	2	1	15	9	24
Do. with Perforation . . . . .	—	—	1	—	1	1	—	1	2	2	4
Nervous Deafness . . . . .	—	1	9	4	11	14	34	21	54	40	94
Tinnitus Aurium . . . . .	—	—	—	—	1	7	2	4	3	11	14
Otalgia . . . . .	—	—	—	—	1	1	1	1	2	2	4
Hemorrhage from Ear . . . . .	—	—	—	—	1	—	—	—	1	—	1
Deafness from Cerumen . . . . .	1	2	8	8	14	12	73	43	96	65	161
Chronic Inflammation of External Meatus . . . . .	—	—	2	1	4	3	—	3	6	7	13
Contraction and Ulceration of do. Eczema of Auricle and Meatus . . . . .	3	1	2	1	1	2	—	5	6	9	15
Congenital Malformation . . . . .	—	—	—	—	1	—	—	—	1	—	1
Deafness from Disease of Throat . . . . .	—	—	2	1	—	1	1	1	3	3	6
	20	16	94	73	107	113	160	125	381	327	708

Mr. Wilde distinguishes the following forms of inflammation of the membrana tympani:—

i. Acute inflammation of the membrana tympani, accompanied by inflammation of the cavity of the tympanum; frequently of a rheumatic character.

ii. Subacute inflammation, accompanied by pain.

iii. Chronic inflammation, with or without inflammation of the tympanum.

iv. Strumous inflammation.

v. Syphilitic inflammation.

vi. Febrile subacute inflammation, accompanying the exanthemata and other fevers; generally producing otorrhœa.

In our Extracts we have given Mr. Wilde's account of the physical signs, and his treatment of acute myringitis and tympanitis (Arts. 43 and 53). We have also recorded his account of chronic myringitis (Art. 44). In the subacute affection, Mr. Wilde states the first symptom is deafness, which has appeared rather suddenly; it may be perfectly painless, but as destructive to hearing as the acute affection, and it may be, but is not always, accompanied by tinnitus, and, generally speaking, there are no constitutional symptoms; the deafness which ensues is of the most irremediable nature, and the author is convinced that such cases have been repeatedly treated as "nervous deafness." It is important to note that according to Mr. Wilde, in this disease mercury is as necessary as in acute myringitis, except only that it should be slowly introduced into the system, so as to produce a steady and gradual effect. It will be seen in the articles extracted, but we may here repeat, that Mr. Wilde's principal remedies in myringitis are leech-



ing and antiphlogistics, generally with *mercury*, and the local application of nitrate of silver.

—A work has been recently published by Mr. Yearsley,\* on the subject of diseases of the ear, the object of which is reported† to be, the proving that nine-tenths of the cases of deafness which come before the practitioner will be found to have originated in a morbid affection of the mucous membrane lining the throat, nose, and ear. All the results of myringitis described by Mr. Wilde are referred by Mr. Yearsley to this as their origin. We have not this work before us, but we cannot help remarking the diametrically opposed opinions of Mr. Wilde and Mr. Yearsley on the subject of treatment, as shown by the following extract:—

“If I were asked,” Mr. Yearsley says, “to name, in the order of their frequency and importance, the chief causes which give rise to the condition of mucous membrane, and subsequent loss of hearing, which I have described, I should thus place them: 1, cold; 2. the exanthemata; 3. dyspepsia; lastly, *mercurial medicines*. Some of the extreme and most unmitigable cases of deafness I have ever witnessed were produced by severe salivation; and I must confess that I never saw a case of this kind, of any standing, which derived decided benefit either from local or constitutional treatment. If there is in the materia medica a medicine which has the power of acting as a poison to the sense of hearing, where there exists predisposition to deafness, I believe it to be *mercury*. Of course, my strictures are directed not so much against its exhibition as a purgative or alterative, though *even here it is dangerous to the deaf*, but when given to its *specific effect*. From watching the progress of many cases, and from the analogy of the symptoms produced by mercurialization, with those affecting the guttural and aural mucous membrane in influenza, dyspepsia, and the exanthemata, I believe mercury, like them, injures the sense of hearing through the medium of the mucous surfaces. Long after the salivary glands have ceased to be affected, an erythematic state of the throat and fauces remains, often by its persistence affecting the Eustachian tube and tympanum in the manner I have described when chronic catarrh has been the exciting cause.”

Mr. Yearsley argues with Kramer on the advantage and necessity of catheterism both in diagnosis and treatment.

—Dr. James Bryan, of the Academy of Medicine, Castleton, U.S., has communicated some very sensible observations on the erroneous principles which have led to a neglect of purulent discharges from the ears. The considerations which have led to non-interference in these cases are—1st, that such discharges act as a diverticulum of nature, which it is dangerous to interfere with; 2dly, they very frequently heal of themselves, leaving no great derangement of the organ. Dr. Bryan points very forcibly to the evils of the prolongation of this disease; he describes the pathological appearances presented, his experience fully confirming that of the British and German surgeons quoted in the present and former Volumes of the “Abstract.” Dr. Bryan states that the practitioner is not justified in allowing a discharge to continue *a single day in any case*, without appropriate remedies, but, on the contrary, he should be as anxious to arrest it as if it were a purulent ophthalmia, or any other inflammatory affection of the eyes.‡

\* Deafness Practically Illustrated; being an Exposition of Original Views as to the Causes and Treatment of Diseases of the Ear.

† London Medical Gazette, Dec. 1847, p. 1017.

‡ Medical Examiner, Sept. 1847, p. 523.

## OPHTHALMIC SURGERY.

(Continued from Vol. VI. p. 242.)

## § XI.—Operations for Artificial Pupil.

Following the anatomical classification adopted by Professor Desmarres, according to the plan laid down in the first part of this Report (Vol. VI. p. 213), we now proceed to supply the omissions then made.

The subject of artificial pupil occupies 53 pages in Dr. Desmarres' work; five processes are enumerated, as follows; the first four of which have been modified in a thousand different ways. 1. Iridotomia (*incision, Cheselden's operation*). 2. Iridodialysis (*separation, Coreodialysis*). 3. Iridectomy (*excision, Corectomia, Wenzel's operation*). 4. Corectopia (method of Adams, Himly, and Guépin, by *inclosure or distension*). 5. Dilaceration (*Desmarres' method*).<sup>\*</sup> Mr. Jones describes three principal modes—incision, excision, separation.<sup>†</sup>

33. Dr. Desmarres' method of dilaceration is proposed as a substitute for the process of separation, applicable only to the cases of complete anterior or posterior synechia, separation at the ciliary ring being frequently followed by severe accident. He considered that there might not be more inconvenience in breaking the adhesions between the iris and the cornea, or the iris and the capsule, than in breaking down the ciliary attachments of the diaphragm, and practice having demonstrated that good results may be obtained in that way, he frequently substitutes his own method for that of Iridodialysis.

1st. He punctures the cornea with a lance-shaped knife, straight or curved, according as he operates upon the internal or external edge of the cornea. 2d. A pair of curved forceps being held with their convexity forwards are introduced into the anterior chamber, closed, and pushed forwards to the place where the iris has contracted adhesions with the cornea or capsule, the branches are immediately opened to the full extent that the wound of the cornea permits, and exercising a slight pressure from before backwards upon the iris, the latter is seized by the instrument. The portions of the iris comprised between the extremity of the forceps and the morbid adhesion bend and form into folds, when, by a rather brisk traction, he draws the forceps towards him, separates the iris from its adhesions, and immediately recognises, by its black colour, the bottom of the eye. As soon as the adhesions of the iris are broken, even to the smallest extent, the portion laid hold of is easily drawn outwards; the artificial pupil which results, takes a triangular or quadrilateral form. 3d. The iris held by the forceps should be brought through the corneal incision, and exercised with the curved scissors as near as possible to its ciliary attachment, as in the third stage of ordinary excision. If the defective method of corectopia or distension be preferred, the iris must be left in the corneal wound.<sup>‡</sup>

34. A Modification of Iridectomy (Wenzel's operation) has been recommended by M. Stæber. When the pupillary border of the iris is adherent through its whole extent to the opaque capsule of the lens, which is generally produced by chronic inflammation of the iris and of the capsule of the lens, the only efficacious means, he states, of giving sight, consists in extracting the lens and excising a portion of the iris. This is done in Wenzel's operation; which consists in cutting out at the same time a semicircular flap, both of the cornea and of the iris, then extracting the lens, then laying hold of the flap of the iris, and excising it. But the last part of this operation is frequently difficult, the surgeon may even be obliged to give up the operation, because the cornea, the iris, and the capsule of the lens being incised together, a part of the vitreous humour frequently escapes by the wound made in these membranes.

To remedy this inconvenience, M. Stæber suggests the following modification, which he has already adopted in the living subject. In the first place, he cuts out a flap of the cornea, as in extraction, leaving the iris intact. Secondly, he

<sup>\*</sup> Lib. cit., p. 432.<sup>†</sup> Lib. cit., p. 293.<sup>‡</sup> Lib. cit., p. 474.

makes an opening in the iris sufficient to serve for a pupil and for the passage of the lens. For this purpose he thrusts a small hook into the iris, towards the middle of the space comprised between the ciliary and pupillary borders; he raises the iris by drawing lightly on the crochet, and excises with curved scissors, on their flat surface, the portion raised by the hook. He tries to include in this excision as large a portion of the iris as possible. Immediately afterwards the lens escapes; for in excising the iris the capsule is opened, at least in those cases where the pupillary border of the iris adheres to this capsule. The operation being terminated, the eye is immediately closed, and there is no fear of the escape of the vitreous humour.\*

—*Drilling* is another plan for restoring an obliterated pupil, described in the works before us.† The late Mr. Tyrrell recommended a modification of division by corneal puncturation, which he designated by this title. He passed a very fine straight needle, of uniform thickness, somewhat obliquely through the cornea at the outer part, and then directing the point towards the anterior capsule of the lens, close to the inner margin of the pupil (taking care not to injure the iris), and causing the instrument to penetrate the capsule, and enter the substance of the lens, to the extent of about one-sixteenth of an inch, he rotated the handle of the needle between the forefinger and thumb, so as to make the point act as a drill, and then withdrew the needle. An opening was thus secured more free than would be effected by a simple puncture.

He usually had to repeat this operation seven or eight times, at intervals of from three to five weeks, taking care to puncture the opaque capsule in a fresh place at each operation, before the pupil was cleared. The operation in no instance produced inflammation of any consequence, and did not confine the patient for more than two or three days.

In a few instances it was necessary to make an artificial pupil subsequently, by incision with Mannoir's scissors.

—Mr. W. R. Beaumont has described a kind of *forceps* for *seizing the iris* and detaching its ciliary margin from the corpus ciliosa, or for drawing any portion of the iris through a wound in the cornea. He found, on the dead subject, that the simple fine hook sometimes tears its way out of the iris instead of detaching it, whereas, with his own forceps, neither on the dead or the living subject, did this laceration without detachment take place; nor did he fail, in any instance, in seizing the iris, at the first attempt, close to its ciliary margin. The forceps are bent, the point where the blades are closed are perfectly smooth, the teeth being there concealed, so that the instrument may be introduced into the anterior chamber, without risk of wounding any other part than that portion of the iris which it is the operator's intention to seize; they are introduced closed through the wound in the cornea, and should not be opened until the points reach the ciliary margin, or that part of the iris which it is intended to seize; the point should then be pressed gently against the iris, and the blades closed by the thumb and under finger, when they cannot fail to seize the iris, and hold it with sufficient firmness for the completion of the operation. A plate of the instrument accompanies the paper.‡

—The following is an abstract of the *general rules* laid down by Professor Desmarres relative to the operation of artificial pupil.

The operation is indicated when one of the eyes having been destroyed, the other is affected with a complete, or nearly a complete, occlusion of the pupil by false membranes (*synechia posterior*). When the occlusion is complete, *excision*, *separation*, or *dilaceration* may be resorted to. When the occlusion is incomplete, *excision* and, in some instances, *distension* is applicable. The operation is indicated also when the pupil is completely, or nearly completely, obliterated by a *synechia anterior*. *Dilaceration* is applicable in complete cases; *excision* when only a small portion of the pupil has been preserved, or, in the latter case, *distension* may be employed. An artificial pupil is also indicated when there is a central speck of the cornea; *excision* is the operation to be preferred in this case. The operation is

\* Gazette Médicale, 10 Avril, p. 279.

† Jones, p. 289; also Brett on Cataract, Artificial Pupil, &c., p. 73.

‡ London Medical Gazette, March 1847, p. 502.



indicated, lastly, when a large solution of the cornea is imminent from ulceration, there being danger that the natural pupil will be destroyed altogether, *excision* and *distension* being in such cases the processes to be resorted to. An operation is also sometimes required for blindness from the persistence of the pupillary membrane, in *atresia pupillaris*, in opaque and transparent staphyloma, and owing to the existence, as from syphilis, of false membranes, which diminish or obliterate the pupil.

a. *In general when the patient sees with one eye, the operation for an artificial pupil is considered as contraindicated*; but there is great exaggeration in the fears entertained upon this subject. Mr. Jones lays it down as a principle, that an operation is not to be thought of, unless the patient has lost all useful vision with both eyes.\* According to Dr. Desmarres' personal experience, the operation may be performed without risk when one eye is *sound*, particularly under certain conditions; far from a negative result, owing to a disturbance of the vision (*diplopia*), a certain improvement of the sight takes place. Desmarres has done the operation six times in one year, without a patient having once had to repent it. The indispensable conditions when one eye is sound are, that the natural pupil is wholly or in part obscured by a leucoma; that it has been only incompletely destroyed by anterior or posterior synechia; that the internal edge of the cornea remains transparent. In every case wherein an artificial pupil is established on the internal side of the eye, the optic parallelism may be preserved, and vision will be improved when both eyes are open.

b. *Should an operation be performed upon an eye which allows a patient to walk alone?*—This may be answered negatively or affirmatively. If nearly the whole cornea be diseased, it is evident that no experiment ought to be made; but when the cornea is transparent over a great part of its surface, the pupil very small, and the iris healthy, an artificial pupil is indicated. To refuse to operate in such a case is, in Dr. Desmarres' opinion, to merit the reproach of timidity—excision or distension are indicated.

c. *The eye to be operated upon should not exhibit any trace of the inflammation which has produced the occlusion of the pupil.*—The operation should not be done until a long time after the inflammation has subsided. It should be deferred if any serious affection of the eyelids, as ectropium, obstinate trichiasis, &c., exist; when the conjunctiva is granulated or varicose; in confirmed atrophy of the bulb; in hydrophthalmia, and in very old synechia complicated with occlusion of the pupil by false membranes.

d. *The cornea should be transparent over a sufficient extent.*—This must have reference to the subsequent loss of substance in the iris. Without this condition, the result of the operation would be neutralized.

e. *When thick plastic exudations have closed the pupil, and the occlusion is complete, is an operation indicated?*—It is seldom that the crystalline apparatus is not affected; the opacity is sometimes confined to the capsule, and at others extended to the lens. The operation is not contraindicated, the cataract may be destroyed at the same sitting, immediately after the artificial opening has been made, or at some more distant period, if anything should prevent its being then proceeded with.

f. *Before an artificial pupil is made, the state of the retina must be ascertained.*—It is of the first importance to know whether the retina remains sound, and that there be not an amaurosis besides the occlusion of the pupil. It should not be forgotten, however, that although one may lay it down as a principle in general, that the patient should distinguish day from night, there are exceptions wherein the eye does not perceive a ray of light, and yet the patient is not amaurotic. Numerous observations have put this fact beyond doubt, and patients before now, in these sad circumstances, have recovered their sight by an artificial pupil. Besides the false pupillary membrane, they have been affected with a soft cataract, which intercepted the rays of light.

g. *The iris should be the great object of attention.*—When it is of a dirty colour, or of a reddish-green tint, its fibres having lost their normal aspect, it may be expected to tear under the use of instruments, and other formidable inconveniences result, compromising the success of the operation.

\* Lib. cit., p. 294.

H. *If a patient presents in one eye an occlusion of the pupil, and on the other a simple cataract, the latter should be operated upon, the chances of success being greater.*—Still, if vision be interfered with by a central leucoma, or by an incomplete anterior or posterior synechia, and it appears to be possible to replace the pupil by excision or permanent distension on the internal side, it would be better to do this operation than that for cataract, especially if the lenticular opacity is not complete.

I. *The age of the patient should be considered.*—Some have recommended that an artificial pupil should not be attempted before puberty, others have fixed the period at from six to eight years. There is no reasonable motive to deprive an infant of the chances of the operation during so long a period, if there be no general complication to prevent its performance.

J. *General complications must be considered;* such as pregnancy, the climacteric period, the existence of any constitutional disease, or of any specific affection, as syphilis, and of epidemics,—the operation should in these cases be averted. When the iris is disorganized under the influence of syphilis, the chances of the success of an artificial pupil are singularly diminished.

K. *An artificial pupil should, in general, be larger than a natural one.*—It should be nearly equal in size to the natural pupil in the evening by a moderate light; still there are cases in which a very small opening suffices for vision. If, on the other hand, too great a portion of the iris be removed, the patient will find himself under conditions analogous to those which attend mydriasis.

L. *Place in which an artificial pupil should be made.*—This should be as near the centre as circumstances will allow; but obstacles generally exist to its being placed there, and it frequently becomes necessary to open the iris at some part of its circumference. When this is the case, authors disagree very much as to the best situation. Tyrrel, Mannoir, and others, advise the temporal edge; Jæger, Sanson, Mackenzie, prefer the internal edge. Desmarres believes that the internal angle should be preferred, then the lower, then the external inferior. If an artificial pupil is to be made in both eyes, he remarks, it should not be done on the temporal side, which would give a disagreeable appearance, and cause diplopia; but, if the state of the parts will permit,—1, inwards; 2, inwards and downwards; 3, downwards; 4, upwards; 5, within in one eye, without in the other, taking care that the parallelism of the two optic axes is possible.

M. M. Taignot has furnished the Academy with a case of artificial pupil, successfully made, notwithstanding the absence of the anterior chamber of the eye. He maintains that the adhesion of the iris to the cornea is by no means a contraindication to the formation of an artificial pupil. A woman, 57 years of age, had been operated upon for cataract by extraction unsuccessfully, the cornea maintained its usual convexity, its inferior half being opaque, its superior half perfectly diaphanous. The iris appeared to adhere closely to the opaque portion, and to be in apposition with the other portion. Accordingly, the anterior chamber no longer existed. That portion of the iris which could be seen appeared to be unaltered in colour and texture. The pupil, contracted to a pin's head point, was obliterated by a grayish-white false membrane. Vision was completely destroyed, the patient barely distinguishing day from night, as the other eye was destroyed. An artificial pupil was made at the superior and external part of the iris by excision; no accident occurred, the blood effused was rapidly absorbed, the new pupil was of an oval shape, its great diameter directed from above downwards, and from without inwards; it was large enough to lodge a pea; its internal half was obliterated by the anterior capsule of the lens, became opaque and adherent to the iris after the operation for cataract; but its external half remained free and sufficient for the exercise of vision.\*

36. *Corectopia, or altered position of the pupil*—usually accompanied by irregularity of its form, is, according to M. Duval,† almost always accidental, sometimes associated with synechia posterior; more frequently after extraction of a cataract, for example, with synechia anterior, followed by a staphyloma of the iris. In one case, the globe of the eye was penetrated by a knife through the sclerótica, six millimetres from the edge of the cornea, towards the greater angle; hernia of the choroid coat occurred through the wound, and the iris was drawn towards it, so

\* Gaz. Med., Nov. 27, 1847, p. 953.

† Ibid., 20 Mars, 1847.

that the pupil was elongated transversely into an angle contiguous to the corneal limb. It is in this way that staphyloma of the choroid in cirsophthalmia, some glaucomas, &c., are almost always accompanied with displacement of the pupil towards the sclerotic tumours. Corectopia constitutes again an ingenious mode of corenmorphosis imagined by Adams. Where the pupil is free, and the centre of the cornea is occupied by a leucoma, Adams proposed a small opening in the corneal tunic, not far from its limb, and the introduction of delicate forceps for the purpose of hooking the iris, and uniting it to the wound in the cornea. This is the *permanent distension of the pupil*, so denominated by Guépin, the fourth mode of forming an artificial pupil, referred to at the commencement of this article; its object is to draw the pupil to the edge of the leucoma. Many inconveniences attend this operation, which is justly abandoned.

Eccentricity of the pupil as a primary organic effect is very rare. In many thousand cases M. Duval has met with it but once.

## § XII.—Diseases of the Capsule.

37. *Capsulitis*.—This affection is for the most part chronic, rarely acute. It is seated particularly in the anterior surface of the capsule; it accompanies other inflammatory affections of the membranes, and is especially associated with iritis, in its first degree, and punctuated corneitis, and is frequently an *aquo-capsulitis*. It is characterised by a bluish cloud at the bottom of the pupil, at first not easily recognised, but gradually increasing, and as it progresses, the iris becomes involved, adhesions taking place between it and the capsule, constituting *posterior synechia*. After the affection has continued some time, remarkable vascular ramifications traverse the membrane, and plastic and fibrous deposits take place. There is no pain in capsulitis, only a sense of tension and compression in the globe or bottom of the orbit, augmented under the influence of light. Its terminations are resolution, occasionally suppuration, synechia, several varieties of cataract, and complete or incomplete obliteration of the pupil. The anatomical and physiological symptoms are given minutely by Prof. Desmarres, and the treatment is antiphlogistic, the indications being the same as in iritis. When the posterior surface of the iris and the anterior wall of the capsule is the seat of the disease, the term *uveitis* is employed by Jones\* and other authors.

38. *Ossification of the Capsule*.—This is not so rare a disease as might be supposed; the lens is sometimes atrophied, and sometimes ossified also. Cases are recorded by Gibson, Wardrop, and especially by Middlemore.

## § XIII.—Diseases of the Crystalline Lens.

These are—1st, *luxation*; 2d, *ossification*; 3d, *lentitis*; 4th, *cataract*. Dr. Desmarres holds that the lens itself is subject to inflammatory action, as indicated by its opacity after injuries. He remarks that the contact of the aqueous humour, when the capsule has been injured, is not alone sufficient to account for this opacity. He has known a lens remain transparent for two months in the anterior chamber; and Cammerer describes a case in which, under similar circumstances, it remained transparent two years. Jones remarks that the lens itself may become opaque, dissolved, and even the seat of suppuration, and that vessels have been observed shooting into it from the inflamed capsule.†

39. *Regeneration of the Lens*.—Mr. Jones states that Pauli, Lowenhardt, and Textor have repeated the experiments on regeneration of the lens in animals with success. Textor communicates some new cases of regeneration of the lens in man, after operations for cataract. The proof that the newly-formed substance possesses the same intimate structure as the lens has at last been supplied by Valentin's microscopical investigation of the subject.‡

40. *Cataract—classification of its varieties*.—Since the time of Beer, cataracts have been divided into *true* and *false*. Dr. Desmarres adheres to this division, which does not appear to be attended with the inconveniences which some authors imagine. Among the true cataracts are arranged those which have their seat in

\* Lib. cit., p. 86.

† Ibid., p. 88.

‡ Ibid.



the lens, or its capsule, separately or simultaneously; among the false cataracts are placed *opacities* seated in the pupil, and produced by the organization of a fibrinous, purulent, or sanguineous material. Here also is placed the *pigmentous* or *ureal* cataract. It has been said that a false cataract is no cataract at all; but this, Dr. Desmarres remarks, is evidently only an affair of words, since, in effect, the opacity is seated in the pupil, and prevents vision.

## CLASS I.—TRUE CATARACTS.

a. Lenticular cataracts	Hard . . . . .	{	Green.
			Black.
	Soft . . . . .	{	Osseous.
			Stony, or chalky.
			Striated, etiolated, barred, dehiscent, with 3 branches, &c.
			Disseminated, or dotted.
			Congenital.
			Traumatic.
			Glaucomatose.
			Liquid . . . . .
Other varieties—soft, hard, or liquid	{	Cystic, purulent, fetid.	
		Shaking, or floating cataract.	
b. Capsular cataracts	{	Luxated cataract.	
		Pyramidal, or vegetant.	
c. Capsulo-lenticular cataracts	{	Arid siliquose.	
		All the varieties of lenticular and capsular cataracts.	
d. Secondary cataracts	{	Lenticular.	
		Capsular.	
		Capsulo-lenticular.	

## CLASS II.—FALSE CATARACTS.

Fibrinous cataracts.  
 Purulent cataracts.  
 Sanguineous cataracts.  
 Pigmentous cataracts.

This arrangement has all the advantages of a classification according to the seat of the affection, and it also indicates the different degrees of density which the lens presents. The arrangement adopted by Mr. Jones is essentially the same.\*

The article "Cataract" occupies 170 pages, so that we cannot be expected to do more than allude to a few of the more important points. The disease is defined "*a total or partial opacity of the crystalline apparatus.*" After describing the anatomical and physiological symptoms, the causes, predisposing and occasional, the progress and prognostics of cataracts in general, Dr. Desmarres proceeds to treat of the classes and varieties *seriatim*.

The character, as remarked by the author before us, which is of the most importance to distinguish the species of *lenticular cataract* is consistence, which has also reference to the kind of operation for their cure; but since this consistence cannot be ascertained in a direct manner before an operation, the strictest attention must be paid to the history and symptoms of all the varieties. Dr. Desmarres gives the following:—

\* Manual, p. 227.

*Differential Characters of Lenticular Cataracts.*

HAIRD.	SOFT.	LIQUID.
<i>Opacity</i> advancing from the centre of the lens to the surface. <i>Spot</i> gray, green or black as an exception. <i>Circumference</i> of the lens always maintaining a little transparency.	<i>Opacity</i> advancing from the surface to the centre. <i>Striæ</i> white or amber, frequently uniting in the middle of the lens, which they divide into a great many triangles. <i>Spot</i> sometimes uniform, milky, or of a caseous appearance. <i>Circumference</i> always opaque.	<i>Opacity</i> advancing from the surface to the centre, and increasing by successive deposits during the repose of the eye. <i>Spot</i> uniform, yellowish-gray, when the eye is in motion. <i>Circumference</i> always opaque.
<i>Volume</i> very small. <i>Shadow</i> large. <i>Posterior chamber</i> very large. <i>Uvean circle</i> scarcely visible. <i>Anterior chamber</i> normal.	<i>Volume</i> very large. <i>Shadow</i> , none. <i>Posterior chamber</i> destroyed. <i>Uvean circle</i> very large, and very perceptible. <i>Anterior chamber</i> diminished.	<i>Volume</i> very large. <i>Shadow</i> , none. <i>Idem</i> .
<i>Vision</i> improved in a moderate light, scarcely ever absolutely abolished.	<i>Vision</i> always abolished. <i>Sensation of the light</i> very often obtuse.	<i>Vision</i> always abolished. <i>Sensation of the light</i> obtuse.
<i>Progress</i> very slow and equal.	<i>Progress</i> slow, generally very unequal; sometimes very rapid.	<i>Progress</i> very slow and equal; rapid only when dissolution is advanced.

It is now generally admitted, that a capsular cataract, independent of lenticular cataract, may exist, although it is much more rare than is generally believed.

*Differential Characters of Lenticular and Complete Capsular Cataracts.*

LENTICULAR.	CAPSULAR.
<i>Opacity</i> proceeding from the centre to the surface of the lens, or inversely, without having been preceded by any inflammation.	<i>Opacity</i> extending itself to the surface of the crystalline apparatus, and being always preceded by inflammation.
<i>Spot</i> gray, green, black, white, or amber, frequently permeated by <i>striæ</i> , which all converge towards the middle of the lens, perfectly smooth at its surface, even when these are numerous. In liquid cataracts, the <i>striæ</i> are transverse when the eye is at rest. The lenticular cataract involves by degrees the whole lens.	<i>Spot</i> always of a dull white, chalk colour, formed of rugose plates united together, without order, and presenting asperities, which project from the surface of the membrane. No regular <i>striæ</i> . The capsular cataract remains stationary and limited if the inflammation subsides.
<i>Volume</i> very large or very small. <i>Form</i> always convex.	<i>Volume</i> small. <i>Form</i> flattened.
<i>Iris</i> , mobile or immobile, without adhesion, sometimes projecting forwards; or, as an exception, oscillating ( <i>cat. liquid</i> ).	<i>Iris</i> rarely mobile, frequently adherent and drawn backwards; never oscillating.
<i>Shadow</i> large, or none.	<i>Shadow</i> none, when there are adhesions.
<i>Vision</i> abolished completely, or improved in a moderate light. <i>Sensation</i> sometimes obtuse in the day; mostly distinct.	<i>Idem</i> .

41. *Treatment of Cataract.*—This is divided into *medical* and *surgical*. Professor Desmarres agrees with all his predecessors who have treated the matter honestly, that a fully-formed or advanced lenticular cataract, is absolutely incurable by *medical treatment*. The question of the practicability of such a cure, can only arise in certain varieties of capsular cataract, and in some exceptional cases of traumatic lenticular cataract. In explanation of the cases in which a lenticular cataract has disappeared spontaneously, and the patient has recovered his sight, Dr. Desmarres refers to the rupture of the capsule in consequence of a blow or violent effort.—If the capsule is ruptured by any force, the lens, submitted to the action of the aqueous humour, becomes absorbed. The reported cures have generally been errors in diagnosis. When, however, a *traumatic lenticular cataract* is *incomplete*, it may sometimes be cured by energetic antiphlogistics; and by the same treatment, *capsular cataracts* may also be frequently cured. M. Pugliatti, professor of surgery at Messina, announced that he had cured a great many incipient cataracts, and soft cataracts more completely formed, by a treatment, continued for about three months, consisting of the repeated application of liquid ammonia to the tem-

ples, and the internal use of iodide of potassium. The ammonia was applied by first blistering the surface, then soaking a pledget of linen, several times folded, in the liquid, and placing it upon the blistered part, and covering the whole with a convex glass. M. Pugliatti believes that the ammonia penetrates the tissues, and acts directly upon the lens. We need scarcely say that this imbibition through the integuments of the living body remains to be proved; but the author states that the cataract is first reduced to a sort of cloud, and then disappears; that he has cured every species—spontaneous and traumatic, old and recent; but that, in many cases, the treatment fails.\* Dr. Desmarres recites three of this gentleman's cases, but adheres to the conclusion which we have already enunciated.

42. A *congenital cataract* of one eye, the consequence of the persistence of the pupillary membrane of Wachendorf, *cured without an operation*, has been described by M. Paul Bernard. The possibility of this, he remarks, has been denied. The case occurred in a child six weeks old, born with a complete occlusion of the pupil of the left eye. The obstructing membrane was of a slightly grayish-white colour, and of extremely fine texture, resembling a spider's web; it was placed more in advance than the capsule of the lens, and the iris, exposed to the brightest light, was quite immovable. The two latter circumstances, although of considerable value, are regarded by M. Bernard as insufficient to establish an accurate diagnosis, since a capsular cataract may project from being distended with fluid; and by pressure all round the edge of the pupil, or by adhesions produced by this pressure, the action of the iris may be totally prevented. But on examination with a glass, a very small solution of continuity was observed in the centre of the obstructing membrane, nearly round, and with a black basis. On the sides of this minute aperture vessels were observed, ranged in arches, in every respect resembling those described by M. Cloquet on the pupillary membrane. The cataract was evidently produced by the remains of the membrane of Wachendorf.

Under these circumstances an operation was deemed unnecessary and dangerous. Friction of the eye and temple three times daily with belladonna ointment, and half a grain of calomel night and morning, were prescribed; on the following day nearly a third of the circumference of the pupillary membrane was ruptured, and detached from the iris; the pupil was of a deep black colour, and irregular triangular form. On the next day the separation was greater, but had not taken place externally; a little was gained daily for five days, when the pupil became manifestly contractile, without any inflammation; the calomel having been substituted by mercurial ointment to the temple. The treatment was continued for about three weeks, at which period the pupillary edge was free for about nineteen twentieths of its circumference; but at its external edge a slight vascular adhesion existed, which retained what was left of the pupillary membrane. By retraction, or absorption, this membrane was reduced to less than a third of its original size; it now floated in the aqueous humour, and did not in the slightest degree interfere with vision, and it would doubtless be ultimately contracted and absorbed, so as to disappear altogether.

M. Bernard recites the anatomical facts relating to the pupillary membrane, which seem to explain this case, and very justly regards it as a "rare, interesting, and fortunate case."†

43. *Surgical Treatment.*—Very copious *general rules*, by which the ophthalmic surgeon is to be guided in advising a patient as to the operation for cataract, are laid down by all the authors before us. In a comprehensive paper by Dr. A. Watson, a summary of these rules is given as follows:‡

*An operation is proper in cases of cataract.*—When the patient is blind, either from a complete cataract in both eyes, or in one eye, while the sight of the other is wanting. But there are cases of cataract in which only one eye is affected, and even in it the disease may be only partial, while perfect vision remains with the other; so that it is a question whether or not an operation should be performed.

In the cases of elderly persons, whose occupations do not require much exertion

\* *Annali Universali di Medicina.*

† *Gazette Médicale*, 10 Oct., 1846, p. 798.

‡ *Edin. Med. and Surg. Journal*, April 1846. Historical and Critical Remarks on the Operations for the Cure of Cataract, by Alexander Watson, M. D., F. R. S. C. E.



of their sight, and are therefore contented with that of one eye, an operation is scarcely necessary, when only one eye is affected with cataract.

In young persons, however, it is of much importance to possess the vision of both eyes, on account of the greater exertion of them required, and the liability to be deprived of the sight of the other eye by injury or disease, when one eye is affected with cataract. It is, therefore, proper in such cases to restore the sight, where one eye has become blind from cataract, just as we would operate on the left eye of an individual, after having restored the sight of the right. By operating in these cases without delay, the sensibility of the eye has not become impaired by disease. Besides, the deformity which the blind condition of one eye occasions is obviated, which, especially in females, is of very great consequence. But the risk of a collapsed eye, by an unsuccessful extraction, should be avoided. It is improper to operate till the cataract is so far advanced as to deprive the individual of useful vision. Hence, partial or imperfect cataracts, by which the sight is not much impeded, do not require operation.

*Both eyes, if affected with cataract, should be operated on at the same time.*—The greatest names in surgery are ranged for and against this proposition. Dr. Watson states, if the patient is in a favourable state of health for it, and if the operations are to be performed with the needle, by adopting this course, the patient is subjected to only one period of anxiety and confinement, which are circumstances of importance to all, but more especially to those who are delicate, or much advanced in life. If, however, the patient does not seem, from his constitution, to be in a very favourable state for an operation—if the weakening effects of after-treatment upon a feeble frame be dreaded—or if the operation to be performed is that of extraction, only one eye should be operated on at first, and the other some time afterwards. This mode of procedure subjects the patient to less risk, and we obtain the benefit of the experience afforded by the progress of his case to guide us in the treatment of the second operation. Moreover, the treatment to which the patient is subjected, after the first operation, generally forms a very excellent preparation for the second, as we almost invariably see much less inflammation follow a second operation, either on the same eye or on the other, than occurred after the first. Dr. Desmarres maintains strongly that when the double cataract is complete, we should, in general, operate upon both eyes on the same day.\*

*The age of the patient should influence the surgeon in operations for cataract.*—This disease affects patients of all ages—infancy, youth, manhood, and old age.

In cases of congenital cataract, the importance of early operation is now completely established. It should be done after the infant is three months old, and before the period of dentition; but if delayed till dentition has commenced, an interval should be selected for the purpose after the appearance of some of the teeth. Dr. Desmarres says at twelve, fifteen, or eighteen months old.

In infancy and youth, operations for cataract generally produce less inflammation, and are more successful than in more advanced life. They should, therefore, never be delayed on account of the youth of the patient.

In manhood and more advanced life, inflammation is more apt to follow operations for cataract than either in infancy, youth, or old age; and hence greater precaution is necessary in the preparation of the patient, and more activity in the after-treatment. Banister mentions his having couched successfully the cataract of a lady aged 83 years, after having been blind of that eye 43 years; in another person of 98 years, the eye having been 18 years blind.

Pellier, in 1779, operated on a gentleman aged 84 years, who recovered his sight in 20 days. The operation was accomplished in 17 seconds.

Mr. Lawrence states, that he operated by extraction on a late member of the profession, aged 92, with the most perfect success.

Dr. Watson lately operated successfully on a lady, aged 86. She was not confined to bed after the operation, and no inflammation was produced by it.

This question must be decided not altogether by the amount of years which the patient may have seen; but also partly by the vigour and health he may enjoy, for these do not always depend on age. Although very advanced age does not

\* Liber citatus, p. 554.

forbid an operation, it should be a reason for selecting that which is most simple, and least likely to affect the general health by confinement and after treatment.

*As to the operation which is to be preferred in cases of cataract.*—Our more complete knowledge of this subject has now established the principle, that no surgeon can treat this disease properly who confines himself to the performance of one operation; but as the differences in the nature of the disease and circumstances of the patient require different modes of operating, so the surgeon must select that operation which is best suited to the individual case under his care. The data upon which a choice is to be made, consist of these—the nature of the cataract, and the condition of the patient.

1st. *Fluid and soft cataracts* form the cases of most easy and successful operation, by solution performed with the needle. They occur generally in young subjects; and they neither require, nor properly admit of, any other mode of operating.

2d. *Firm and solid cataracts* generally occur in persons of middle or more advanced age; and they form the only class of cases in which any question occurs as to the proper and best mode of operation. They admit of being removed either by extraction from, or by displacement within, the eye; so this brings us to the question as to the merits of, and objections to, these operations.

Although in all the cases of this class the operation of displacement might be successfully performed, in many of them that of extraction is inadmissible. The number of cases, therefore, in which extraction might be performed, is brought within narrow limits. They consist of patients affected with solid cataracts, uncomplicated with any other disease of the eye,—the patient having at the same time a good constitution, a calm mind, not irritable and restless, and his eye well formed, of proper size, and neither too prominent nor too much sunk in the orbit. To these must be added, that the patient should be favourably situated for quietness, care, and attentive nursing.

Another circumstance to be considered and kept in view in deciding upon which operation is best, regards the operator. In a case equally suitable for either extraction or depression, a decision as to the one most desirable will depend very much on who is to be the operator. Does he devote particular attention to these operations, and has he performed them equally well and successfully? If he does, certainly extraction is the most perfect operation; but if not, the depression is the safest.

A great proportion of the cases of solid and hard cataract, now under consideration, admits only of operation by displacement.

Although all cases of solid hard cataract may be cured by displacement by the needle, a great many of the cases admit of this mode of operating solely. Hence an operator might dispense with the operation of extraction, but not with that of displacement. The cases in which the cataract must of necessity be removed with the needle, are those in which the patient has an unsound or delicate constitution, has any unusually inflammatory diathesis, or is very far advanced in life,—having the eye small, unusually prominent or sunk in the head, or the cataract complicated with other diseases of the eye, as partial opacity of the cornea, adhesions of the iris, contraction of the pupil, or disorganized state of the vitreous humour.

3d. *Capsular cataracts*, whether primary or secondary, admit only of removal with the needle.

*The season of the year is of importance in operations for cataract.*—In Europe it has been generally remarked that spring and autumn are preferable seasons of the year for the performance of operations for cataract. So far as Dr. Watson's experience testifies, he cannot say that he has seen cause for attaching much importance to this circumstance, and, with one exception, Dr. Desmarres makes the same remark. Dr. Watson has seen and performed many operations for cataract at all seasons, both successfully and unsuccessfully, and he does not recollect to have attributed any of these events to the season of the year. At the same time, he has no doubt that in other countries, where the colds of winter are more intense, and the heat of summer is greater than in this, or where the inhabitants at these seasons are subject to endemic diseases, the recovery from such operations may be so much influenced, that it is safe and proper to avoid their performance at

those times. Dr. Desmarres considers the operation should not be performed during excessive heat.\*

The preparation and after-treatment necessary in cases of operation for cataract are not of less importance than the proper performance of the operation. Indeed, without great attention, both to the previous preparation of the patient and his after-treatment, the most perfect operations for cataract may prove unsuccessful. Much more of the success of these operations depends on them than is commonly imagined. They consist in attention to many minute particulars, which individually do not seem to be of much consequence; and hence their importance is often underrated. But when taken together, they constitute a form of treatment which has a powerful effect upon the system, and is in most cases indispensable to a favourable result.

1st. In order to prepare a patient for undergoing an operation for cataract with success, the functions of the body, including the circulation, digestion, and nervous system, should be tranquilized as much as possible by moderate diet, rest of body and mind, and such medicines as may be required to restore and promote healthy functions. After such a preparation as this, Dr. Watson has performed each of the different operations successfully, without their being followed by the slightest pain or inflammation of the eye. But without some preparation of this kind he has seldom seen the recovery from operations prove satisfactory.

2d. Neither can too much attention be paid to the after-treatment. By any of the operations for cataract, the eye is more or less injured; inflammation follows, and if severe, or not speedily checked, this soon proves destructive to so delicate an organ as the eye.

Prevention is always better than attempting to cure inflammation after it has taken place. Hence the importance of previous preparation, and such after-treatment as may prevent the occurrence of inflammation. It is generally too late to apply remedies, after inflammation has come on, to preserve the eye and restore the sight. After operations with the needle, it is seldom that blood-letting is necessary to prevent inflammation. But after extraction, by which more injury is inflicted on the eye, this is in general a proper precaution. In elderly persons an opiate is advisable, as vomiting and other symptoms of collapse are apt to follow, which this may obviate. Rest, in a perfectly darkened room, and the constant application of cloths dipped in acid water, low diet, perfect quietness, and attention to the state of the bowels, form the proper and necessary after-treatment. This treatment requires to be continued for two or three days after operations with the needle, and for eight or ten days after extraction.

If inflammation of the eye supervenes, general and local blood-letting, nauseating doses of tartrate of antimony or ipecacuanha, with purgative and sudorific medicines, should be administered with vigour, attention, and care.

Mr. Guthrie's† work appears to have for its objects to describe—1, the diagnostic marks of the various forms of cataract; 2, the appropriate operative procedure for the remedy of each form. So much has been written on the subject of cataract, and most of the circumstances relating to it have been so accurately detailed, that we are by no means surprised to find the author availing himself, in his leading principles, of the recorded experience of the ophthalmic surgeons who have preceded him, including the published opinions of Mr. Guthrie, his father. Nevertheless, the operator will find much in the detail to repay him for perusal, for the work unquestionably embraces a truthful account of the *niceties* of the various operations,‡ as well as a judicious adaptation of each to the particular species which presents itself.

Mr. Guthrie attaches much importance to the appearance and motions of the iris, both as to the nature and treatment of cataract. The contraction and dilatation of the pupil depend on the healthy susceptibility to light of the iris, rather than of the retina; and a due sensibility of the iris generally implies a corresponding state of the retina. There may, however, be an immobile iris dependent on

\* Lib. cit., p. 554.

† On Cataract and its Appropriate Treatment, by the Operation adapted to each peculiar Case, 1845.

‡ Ibid., pp. 67, 73, 76, *et passim*.



the form and state of the lens and its capsule; it may remain fixed and dilated, or fixed and contracted, in consequence of adhesions formed between it and the capsule; or it may be fixed and dilated, in consequence of pressure from the lens protruded by the parts behind. When this is the case, it may be suspected from a diminution of the posterior chamber of the aqueous humour, from an irregular appearance of the edge of the iris and of the capsule, and may be proved by dilating the pupil with belladonna. When, on the contrary, the iris is immobile from diminished susceptibility, the posterior chamber is preserved. Where the space of the posterior chamber is entire, especially when combined with a total inability to distinguish light from darkness, it nearly amounts to a prohibition of the operation, which ought on no account to be performed if accompanied with pain and other signs indicating approaching disorganization.\*

Professor Desmarres' opinion as to the choice of the operation for cataract may be thus summed up. He prefers, decidedly, extraction as the general method; but admits that it cannot be resorted to indiscriminately. It is necessary to determine, before all things, the nature of the cataract, and the complications which exist; want of this discrimination, upon which to found the choice of an operation, has been a frequent cause of failure.

*In ordinary hard lenticular cataract*, in aged subjects, depression has succeeded best in this surgeon's hands; the wound of the cornea after extraction in these subjects healing with difficulty, and the eye becoming compromised; but when the cataract is *osseous* or *stony*, exciting inflammation by its presence, and complicated with amaurosis, it should always be extracted. *Soft lenticular cataract* requires breaking up or dilaceration of the capsule; the lens, in this case, disappears by degrees, the eye not being compromised for one instant. The *semi-soft* lenticular cataract, including the *striated*, etiolated, barred, dehiscient, three-branched varieties, &c., are liable, after depression, to increase in volume, and to excite inflammation, frequently of great severity; or to reascend to the pupil, constituting secondary lenticular cataract; extraction is the proceeding most applicable to these cases, as also to cases of disseminated cataract. In *congenital* and *traumatic* cataracts, not very large, with a uniform degree of softening, as much advanced at the centre as at the surface, the operation of breaking up should be preferred to extraction. *Liquid lenticular cataract* may be as well extracted as operated upon by the needle: but Professor Desmarres prefers the latter method, since it is unattended with danger, and is almost always successful; scleriticonyx is generally preferred to keratonyxis. *Capsulo-lenticular cataracts* are almost always complicated with adhesions between the iris and capsule, so that in many cases depression and extraction present, equally, dangers and difficulties. If the eye be well formed, the false membranes few,—if the inflammation has been some time extinguished, depression and extraction are both possible. For either operation the eye must be prepared with belladonna; if depression be chosen, the needle is introduced by the sclerotica, the iris and capsule separated, and the lens with its opaque capsule depressed. But, besides that, sometimes the adhesion cannot be divided, and the pressure on the lens will frequently, if carried too far, dislocate the iris from its normal attachment; the consecutive inflammation is to be dreaded, since the depressed lens in an eye, otherwise abnormal, almost always induces serious accidents. If extraction be preferred, great difficulties may be expected in its execution, requiring much address and patience, and unless the adhesions are very slight, considerable reaction must be expected. If the cataract is entirely adherent to the iris, neither of these operations are possible, and dilaceration of the capsule, through the cornea or sclerotica, is indicated. If it be not at all, or only slightly adherent, the same rules are applicable as in uncomplicated lenticular cataract.

*Capsular Cataracts*.—When the capsule is inflamed and has become opaque to such an extent as that the pupil has lost its clearness, the affection should be considered in a surgical point of view as a capsulo-lenticular cataract. It signifies little whether the lens is transparent or opaque, when the capsule is so opaque as to prevent the transmission of the rays of light. In all cataracts it is necessary to destroy both the lens and capsule, so that the diagnosis between simple lenticular

\* On Cataract, p. 15.

cataract and capsulo-lenticular cataract is of less importance; but in the latter, the operation is always more difficult, in consequence of adhesions, and the result less certain, for the double reason, that inflammation which has rendered the capsule opaque may retard and compromise the operation; and the operation, infinitely more difficult, may occasion some new lesions. For all capsulo-lenticular cataracts in which the lens still exists, Dr. Desmarres refers to what he has said on the choice of the proceedings in capsulo-lenticular cataract. When the lens has been destroyed by any accident or by an operation, the cataract may be regarded as formed by one of the sides, or by the two sides of the membrane, united by traumatic inflammation after the absorption of the lens. The *arid siliquose variety* is of this nature. In this, if there are not old and stony adhesions to the iris, depression should be preferred, although extraction by the sclerotica may be equally available. But if it is thought that these adhesions cannot be easily broken up, extraction by the cornea should be preferred, or even extraction by the sclerotica,—operations in which, if we do not wholly extract the false membrane, we may at least separate the greater part. We may still make a choice between the two latter operations; if the capsular opacity is very thick, very adherent to the iris, especially on its internal side, we are very guarded as to sclerotic extraction, since the false membrane may not be separated from the iris, and extracted, without producing dislocation of this diaphragm. If, in such a case, on the contrary, the cornea is opened at its inferior edge, the puncture being nearer the point of adhesion than in operating through the sclerotica, a large portion of the opacity may be withdrawn and excised, and the pupil re-established, without fear of rupturing by too violent traction the natural attachments of the diaphragm. If the opacity is more strongly adherent upon the external side, it would be possible, but not preferable, to operate by the sclerotica; the false membrane, by the position which it occupies, being then sufficiently close to the point of puncture, that it may in great part be excised if the adhesion cannot be broken by the simple traction of the forceps.

If capsular cataract occurs as a consequence of an operation for lenticular cataract, care must be taken, whatever the process determined upon, not to wait too long, so that the adhesions between the capsule and iris may not become too strong, a circumstance which may prevent the surgeon extracting or depressing the false membrane, and at all events would embarrass the operation. In the rare case, where the capsular cataract floats free before the pupil, it is sufficient to open the cornea, as in the operation of artificial pupil, when the false membrane is easily extracted with the forceps.

Professor Desmarres remarks, more generally, depression should not be resorted to if the patient has suffered for a long time from congestive amblyopia, since the lens remaining in the eye may prove a new cause of the affection of the retina; nor should it be chosen if there are any traces of the effects of old internal ophthalmia, as dislocation of the iris, numerous posterior synechias or incipient staphyloma of the sclerotica. Extraction should also be preferred if the patient is liable to ocular neuralgia, especially if associated with any affection of the choroid, ciliary body, &c. On the other hand, extraction by the cornea should be rejected if any of the following conditions exist:—1st, the eye being too small; 2d, the eye being too projecting; 3d, softening of the vitreous humour; 4th, the anterior chamber destroyed; 5th, cataract, complicated with partial anterior synechia; 6th, granular eyelids and diseases of the lachrymal sac; 7th, a morbid condition of the general health, or complications which prevent the patient remaining at rest.

The various modifications of the operation for removal of the lens without extraction are thus enumerated: 1st, the lens is plunged into the inferior part of the globe by depressing it directly from above downwards (*direct depression, or couching*), or by forcing it downwards, and at the same time turning it backwards (*reclination*): 2d, the lens is broken up into as many parts as its density will allow of (breaking up): 3d, the lens is subjected to the action of the aqueous humours by depriving it of its capsule (dilaceration of the capsule). These operations are performed by *Alarotomycis*, the globe of the eye being penetrated through the sclerotica, or by *Keratotomy*, through the cornea.

The whole of these processes are most minutely described by Dr. Desmarres, and beautifully illustrated with engravings, and a complete account is given of the

accidents which are liable to occur during and after the various operations, and of the various modifications which have been proposed.

44. *Statistics of Operations for Cataract.*—Dr. Edward Jäger, son of the celebrated ophthalmologist, has given the following statistics of his father's operations for cataract, performed at the Josephine Academy, in Vienna.

From 1827 to 1844, Professor Jäger operated on 1011 cataracts, of which 764 were lenticular, 207 capsulo-lenticular, and 40 capsular. The kinds of operation to which he had recourse were as follows:—

Extraction by the superior section in	728
“ by the inferior section	9
Partial extraction	58
Depression	129
Breaking down the lens	87

1011

Of the above number, 63 lost their sight; and it will be seen by the subjoined table what were the processes employed that gave the worst results:—

Of the 58 operated by partial extraction	3
“ 737 “ by extraction	33
“ 87 “ by breaking down the lens	6
“ 129 “ by depression	21
	63

It follows, from this statement, that extraction has been the most successful; as the proportion of those who lose their sight to the number in whom the operation succeeded, is  $4\frac{1}{2}$  per cent. in extraction; 16 per cent. in depression; and 8 per cent. in breaking down the lens, or absorption. In order, however, to derive full satisfaction from these statistical returns, we ought to have been apprised of the considerations that influenced Professor Jäger to have recourse to one operation in preference to another.\*

45. *Extraction of Cataract by Suction.*—M. Blanchet presented to the Academy of Medicine a patient who had been affected with soft cataract for fifteen months, and on whom he had operated by this method with complete success. The pupil having been previously dilated by belladonna, he made a puncture in the cornea at the limit of this dilatation, in order that the slight mark which would result from the wound should not remain over the pupil. He then introduced through the incision in the cornea, as far as the crystalline lens, a tube resembling an anal syringe, but differing from it in having a greater diameter, and in its extremity being drawn out like the mouthpiece of a flute; he then aspired through the instrument.

If, after having tried the suction, he found the capsule of the lens opaque, he then proceeded as usual.

The patient had been operated upon ten days, the pupil was perfect, vision completely established, and no accident occurred as a result of the operation.† M. Blanchet has employed this method, since June 1846, on other patients, with variable success; he has also resorted to it in certain purulent and sanguineous effusions into the eye.

46. *A New Cutting-needle for the Operation of Cataract by Extraction.*—This is described by M. Mayne; it is contrived for the purpose of—1st, making the section of the cornea and of the capsule at the same time; 2d, to avoid the difficult movement of bringing the knife out of the cornea; 3d, the point is so contrived that the iris would be wounded with difficulty; 4th, the wound is large enough to admit the passage of the lens, but not so large as to allow the humours to pass, and cicatrization is much quicker; 5th, the operation is as easy as that by depression. A plate of the instrument is given, and M. Mayne complains that his instrument has been misunderstood by description without such an accompaniment.‡

\* Bulletin Med. Sciences, from Ueber die Behandlung des granar Staares, Vienna, 1845.

† Gaz. Méd., Juillet 1847.

‡ Gaz. Méd. de Paris, 6 Mars, 1847, p. 188.



§ XIV.—*Diseases of the Choroid.*

These are numerous:—1st, Choroiditis in its three forms; 2d, *Staphyloma*; 3d, *Dropsy*; 4th, *Hypertrophy*; 5th, *Atrophy*; 6th, *Ossification*; 7th, *Specks*; 8th, *Melanoses*; 9th, *Fungus*; 10th, *Traumatic Hernia*; 11th, *Wounds*.

47. *Choroiditis*.—This inflammation is never isolated; owing to its direct vascular communication with the other membranes, and in particular with the retina, iris, sclerotica and conjunctiva, it cannot be independent. Notwithstanding this, Dr. Desmarres devotes ten pages to its consideration. It may appear, at first sight, difficult to recognise inflammation thus located, yet, by attentive observation, pathological phenomena, which occur simultaneously in the other membranes, may give the most positive degree of certainty as to its existence, and enable us to determine the part of the membrane in which the inflammation is most severe, and to prevent its consequences.

§ XV.—*Diseases of the Ciliary Body.*

To treat of diseases of the ciliary body separately after those of the choroid membrane although a *cyclitis*, or inflammation of that body, *hernia, complicated staphylomata* (cirsophthalmia), *wounds*, and other affections, might be described, according to the views of Professor Desmarres, would be a useless repetition.\*

§ XVI.—*Diseases of the Retina.*

These are very numerous, and are divided into three classes—I. Inflammations, including *acute retinitis* and *chronic retinitis*, the latter subdivided into *congestion of the retina*, and *chronic retinitis*, properly so called. II. Neuroses, including *hemeralopia*, *nyctalopia*, and *hemioopia*. III. Affections not comprised in the preceding classes, including *apoplexy of the retina*, *encephaloid*, *dropsy*, *ossification* and *amaurosis*. Cases of *paralysis of the retina* are included in the general description of the last-mentioned affection.

48. In *Hemeralopia*, (night-blindness), as it occurs in warm climates, the first thing to be done, according to Dr. Guepratte, is to withdraw the affected organs from the influence of the light, and for this purpose he prefers to all others the bandage which is used after the operation for cataract. At the commencement it alone may suffice, and in a few days produce a cure. In more serious cases, whether or not there is derangement of the primæ viæ, he prescribes slight purgatives, as marsh mallows, sulphate of soda or magnesia, castor oil, and emetised whey. In strong plethoric subjects, of a high complexion, and with heat of the head, he preceded these means by bloodletting from the arm or from the foot. He has rarely had occasion to have recourse to these energetic means when he had to deal with patients who were otherwise healthy. In from five to twelve days the majority were cured; it was only after this latter period that he considered it necessary to apply a counter-irritant, as a blister to the nape of the neck.†

Dr. Desmarres admits that the causes of this affection are but little known, but considers that the retina is eventually involved; he gives a very interesting case from his own practice. M. Cunier has recorded an instance of a family of Hemeralopes, in whom it has existed for two centuries.‡ It is sometimes endemic, but most frequently epidemic. Mr. Jones has also seen a case of congenital night-blindness.

49. *Nyctalopia* (day-blindness).—Dr. Desmarres regards this as a disease of the same nature as night-blindness. It is totally distinct from the photobia of the scrofulous, or that to which persons accustomed to dark residences, and albinos, are subject, and is a very rare disease. Mr. Jones affirms that in this sense it does not certainly appear that there is any such disease.

\* Lib. cit., p. 684.

† Gaz. Méd. de Montpellier, and Monthly Jour. of Medical Sciences, Sept. 1, 1847.

‡ Jones' Manual, p. 356.

§ XVII.—*Varia.*

50. *Sympathies of the Iris.*—Mr. Guthrie\* has seen many instances in which the sympathy of the iris with the iris of the opposite eye existed, its sympathy with the retina, and accordingly the sensibility of the iris to light, being destroyed. When the sound eye is covered, the pupil of the diseased one, as under ordinary circumstances, dilates to a moderate extent, remaining in that state, and immoveable, under the full glare of the sun; but on uncovering the sound eye, exposing it to the same degree of light, both pupils are eventually contracted.

In a sound eye, no deviation of the iris from a perfect plane is observable; but it sometimes happens, and the case of Captain Kater, F.R.S., is given as an example, that the iris is tremulous, without any defect of vision. This circumstance is attributed by the author to a thinner state than natural of the vitreous humour, by which the balance of support before and behind the iris is disturbed. In an unsound eye this is usually accompanied by a capsular cataract, within which the lens has become soft, or has been absorbed—a state which forbids extraction. Hence, in cases of cataract, moderate pressure should be made on the eyeball with the finger, when, if the vitreous humour is thin and watery, the eye will yield more than it ought to do, and the iris will acknowledge the pressure.

51. *Hemorrhage after Extraction of the Lens.*—Mr. Soden, of Bath, mentioned to Mr. Guthrie two cases in which hemorrhage from the interior of the eye came on the second day after extraction of the lens; it was considered that the vessels of the choroid coat were in a varicose state, which might perhaps have been discovered, and the operation prevented. Mr. Guthrie subsequently saw a case which augured most favourably, both from the appearance of the eye and the success of the operation, yet hemorrhage supervened on the second morning, and did not cease until the eye was lost.†

52. *Blindness from the Use of Sulphate of Quinine*‡—The fact that sulphate of quinine in large doses, will sometimes occasion blindness, has received additional illustration by the publication of several cases by Dr. John M'Lean. The "heroic" treatment pursued by the Americans in this instance, as in some others, is calculated to afford the profession important information. In one case, about sixteen grains of the medicine were administered hourly for a low remittent fever, until nearly an ounce had been taken. In another case, three grains were given hourly for three days. In another, three drachms were taken in thirty-six hours, in six-grain doses. In these and other cases perfect blindness was the result, the amendment from which was very slow indeed; in one instance, there was a gradual improvement during the first year; in another, the sight was partially restored after some weeks, but continued imperfect. "During the greater part of the first year the patient could look steadily at the sun without seeing it, or even any painful sensation being produced. When he first began to see sufficiently to read, which was in the course of the first year, he could perceive but a small luminous spot upon the paper, about one inch in diameter, within which he could distinguish letters, but all without this was cloudiness and confusion. During this time the pupils were very much dilated, and he could see objects at a distance much better than those near by. His sight has continued to improve ever since; and at the present time, although quite imperfect, is sufficiently good to enable him to read and write, although with some difficulty. The pupils are still considerably dilated, and it is with great difficulty that he can discern objects by twilight. The direct rays of the sun upon the head produce pain there, accompanied with a painful sensation deep in the orbit of the eye, and a disordered vision. At the present time exercise easily produces fatigue, by which his sight is much impaired."

Trousseau also relates a case in which, after a dose of 48 grains of sulphate of quinine, the patient became temporarily blind and deaf.

53. *Effect of Bleeding on the Sight.*§—Many authors believe that very copious bleedings injure the sight. M. Duval lays down the following rules in reference

\* On Cataract, p. 17.

† Guthrie on Cataract, p. 85.

‡ Illinois and Indiana Medical and Surgical Journal, Dec. 1846.

§ Gaz. Med., May 15, 1847.

to bleeding in ophthalmic affections; bleed largely when the integrity of the organ is threatened by violent inflammation; bleed largely again when an amaurosis is connected with a violent congestion, which threatens to produce such disorder in the texture of the parts as will be impossible to be overcome afterwards—in amaurosis occurring violently and suddenly, for example. In amblyopia proceeding slowly, insidiously, which almost always happens, avoid spoliative bleedings; abstract blood with reserve.

Bleedings are, again, useful to prevent or counteract the inflammatory accidents which frequently result from operations on the eye. The depression of the cataract imperiously requires them, since a foreign body is left at the bottom of the eye, which invariably induces a flow of blood thereto. Extraction requires it less frequently. Rosas does not bleed at all after the extraction of the lens, for fear of interrupting the adhesive process destined to close the wound in the cornea.

54. *Anæsthesia in Ophthalmic Affections.*—In cases of very violent ophthalmia in children at the Hôpital des Enfants Malades, M. Guersant employed a collyrium composed of one part of nitrate of silver, and four parts of water; but its application was attended with the most violent pain, and the children would cry so violently, that its use must have been abandoned if its advantages had not been so manifest. M. Guersant has submitted several of these young subjects to the influence of ether, by inhalation, under which they have been subjected to the cauterization, without the least murmur. Mr. Lawrence has extolled the effects of ether in a case in which the eye was extirpated for cancer. M. Velpeau extirpated the eye, the patient being under the influence of the same agent.

55. *The Surumpe, a peculiar Disease of the Eyes.\**—A scourge of the traveller in the Cordilleras is the disease called the *surumpe*. It is a violent inflammation of the eyes, caused by the sudden reflection of the bright rays of the sun on the snow. By the rarefied air and the cutting wind, the eyes, being kept in a constant state of irritation, are thereby rendered very susceptible to the effects of glaring light. In these regions the sky is often, for a time, completely overshadowed by snow-clouds, and the greenish-yellow of the plain is soon covered with a sheet of snow. Then suddenly the sun's rays burst through the breaking clouds, and the eyes, unprepared for the dazzling glare, are almost blinded. A sharp burning pain is immediately felt, and it speedily increases to an intolerable degree. The eyes become violently inflamed, and the lids swell and bleed. The pain of the *surumpe* is the most intense that can be imagined, and frequently brings on delirium. The sensation resembles that which it may be imagined would be felt if cayenne pepper or gunpowder were rubbed into the eyes. Chronic inflammation, swelling of the eyelids, dimness of sight, and even total blindness, are the frequent consequences of the *surumpe*. In the Cordilleras, Indians are often seen sitting by the roadside, shrieking in agony, and unable to proceed on their way. They are more liable to the disease than the Creoles, who, when travelling in the mountains, protect their eyes by green spectacles and veils.

Although a deviation from the arrangement adopted, we have thought it better to place the following interesting cases of *paralysis* before our readers at once, than to defer them to the next Report.

56. *Paralysis of the Nerves of the Eye.*—Schurt has published a case of *complete immobility of both pupils, in which a loss of power in the third pair accompanied the loss of sensibility in the optic nerves*; and the recovery of the function of the third pair was followed, after a time, by the restoration, in part, of the mobility of the pupils. The motion of the pupil, it is well known, depends upon some other condition besides the stimulus of light upon the retina; and in amaurosis, with complete immobility of the iris, it would follow from this case, that the motor nerves of the iris have suffered a loss of direct power, as well as of that which they exert when light falls upon the retina. In cases of amaurosis, it appears to be most important to distinguish between the direct motions of the pupil from the action of light, and the motions of the iris independent of light, which vary much, according to the excitability of the temperament of the individual.

\* The Edinburgh Medical and Surgical Journal, April 1848.

† Archiv für Physiologische Heilkunde, 1847, H. i., p. 37 and 38, and Monthly Journal, July 1847.



57. *A Case of Amaurosis of the Right Eye from a slight wound of the corresponding Eyebrow*, is related by Drs. Michelacci and Fedi.\* The reporters observe that it is still a matter of controversy whether a simple traumatic lesion of a branch of the fifth pair can induce amaurosis. Müller seems disposed to attribute its production to commotion of the retina or the optic nerve, although there certainly exist examples of amaurosis following severe lesions of the forehead, without any such concussion having taken place.

Malgaigne, too, trusting to a false maxim that the lesion of a nerve may paralyse its terminal branches, but cannot operate in a reverse manner towards the trunk, is likewise intent upon proving the ease with which the peculiarity of the structure of the orbit allows of the production of commotion of the optic nerve. Lawrence doubts whether amaurosis ever results from injury of the frontal nerve.

The example we here adduce is not explicable, at all events, upon the above supposition. The patient became amaurotic immediately after receiving a small wound from a shot over the right eyebrow. Three questions were proposed by the legal authorities for the consideration of the reporters: 1st, whether blindness really existed? 2d, can it be referred to the infliction of this small wound? 3d, what hope is there for a cure? For a reply to the first of these, the state of the patient's eyes was diligently examined, and they were found to be quite natural in appearance, as also in the action of their pupils, as long as both eyes were kept open; but when the left eye was closed, the right pupil was found to be quite disobedient to any stimulus whatever. The experiments are said to prove the perfect blindness of the right eye, depending upon a complete paralysis of the sensorial nerve. The movements of the iris of the blind eye, which took place whenever the light was allowed to exercise its influence upon both eyes together, or only on the left one, did not at all depend upon the sensitiveness of the right retina, but were exerted solely by virtue of the nervous action excited by the light in the left eye, and by its sensorial nerve reflected through the medium of the brain upon the motor nerves of the right iris. These results agree with other cases of amaurosis confined to a single eye, and find their explanation in the doctrine of the reflex nervous action, as taught by Marshall Hall and Müller.

A very small cicatrix was observed over the orbital ridge, just at the point where the frontal nerve emerges from its foramen; and the blindness having immediately supervened upon the infliction of the wound which produced this, the second question was answered in the affirmative.

The prognosis was unfavourable; for seeing the rapidity with which the blindness was induced, the completely amaurotic condition of the visual apparatus, and the long period which had elapsed (thirty-four days) without any improvement having resulted, and recollecting Scarpa's opinion upon the rarity of cure in these cases, it was to be feared that the loss of the sight of the eye would prove permanent.—*Annali Universali*, vol. cxvi. pp. 21, 22.

The reviewer remarks that, agreeing with the reporters that cases enough are on record to allow of the admission of the production of amaurosis by injury to the frontal nerve, without concomitant *concussion of the retina*, it cannot be allowed that their own case, one of gunshot wound of the forehead, although a slight one, can be considered as an unexceptionable example of this; and Mr. Jones† states that it can scarcely be admitted as regards amaurosis immediately following an injury—that it is directly connected with the injury rather than with concussion.

The following cases and observations will, however, more fully illustrate this subject.

58. *Paralysis of the Third Pair of Nerves consecutive to Neuralgia of the Fifth Pair*.—M. Marchal (de Calvi), in an interesting memoir in the "*Archives Générales*," points out a relationship which exists between paralysis of the third pair with neuralgia of the fifth, that has not been suspected. Trifacial neuralgia, he observes, has been little studied as regards the disorders which it produces beyond the nerve it affects, but which form a very interesting and curious part of its history. It is remarkable that a lesion, limited to a few filaments of the fifth, can, by a retrograde repetition of morbid actions, propagate itself to the nervous centres, and

\* *Medico-Chirurgical Review*, Oct. 1846, p. 544.

† *Lib. cit.*, p. 509.

induce the most extensive, multiplied, and serious accidents, such as the loss of speech or power of deglutition, excessive dyspnœa, paraplegia, violent convulsions, emprosthotonos, furious delirium. This is detailed in a case by Pouteau, which M. Marchal published with several others in a paper upon *Traumatic Prosopalgia*, in the 55th volume of the "Memoirs of Military Medicine." And in these cases so certainly was it the simple lesion of some of the trifacial filaments that induced so fearful an assemblage of symptoms, that when they were divided, by a section extending to the base, *the symptom which had so long resisted all medical appliances disappeared in half an hour, never to return.* Two phenomena, or two orders of phenomena, are sometimes so disproportioned, that the idea of their connexion never at first presents itself to the mind; for who could have thought such grave disturbances of sensibility and motion were dependent upon an old contusion of a few nervous filaments? Several facts, and a careful examination of all their circumstances, were required before this connection could be perceived. These cases of prosopalgia, with *general* lesion of sensibility and motility, led M. Marchal to recognise the *special* relation which exists between the paralysis of the common oculo-motor nerve and neuralgia of the trifacial, in the following cases.

CASE I. A soldier, æt. 47, of a very nervous temperament, was the subject of paroxysmal pains of dreadful violence on the *left* side of the head and face, especially in the vicinity of the supra orbital foramen, mastoid process, and in the teeth of the upper jaw. The left eye became affected with diplopia, but presented no deviation from its normal direction. The sensibility of the left cheek was entirely gone, as also of the nostril, although he could still perceive odours. He could open his jaws only to a very slight extent. M. Marchal tried the experiment of compressing the frontal nerve as it passed out of its foramen. This caused great pain, but *immediately, and so long as it was continued, the diplopia ceased.* The experiment was frequently repeated, with the same results. The pressure, however, could not be employed as a remedial means in consequence of the great pain it gave rise to; but the patient obtained considerable ease during the paroxysms from inducing compression of the dental nerves, by introducing a small piece of wood between two of his teeth. Seven blisters were successively applied over the supra-orbital region, in the space of twenty days, purgatives and stimulating pediluvia being simultaneously resorted to. The pain was relieved, and the sensibility restored; but the diplopia remained, and the globe of the eye became smaller, and drawn inwards, the upper eyelid being also paralysed, so that the eye was kept shut. But now analogous pains and diplopia were observed on the right side, so that this latter could no longer, as heretofore, be obviated by closing one eye. Blisters were applied on this side, and the pain relieved; but the diplopia of either eye continued, and the patient's vision became sensibly enfeebled. Time and the use of Meglin's pills, or probably the first alone, gradually restored his vision; and one evening, after drinking to excess, the diplopia also suddenly left him. The patient, however, eventually became the subject of various other nervous affections, which entirely destroyed his health.

CASE II. A young woman, æt. 26, and otherwise in perfect health, had suffered for two years most violent pains in the left side of the head, radiating towards the ear, eye and cheek. They were accompanied by tinnitus aurium, and red flashes before the eye. Eight days before visiting her, the eyelid could not be raised, and the globe of the eye was simultaneously drawn outwards. The pupil was dilated. A sharp pain was felt opposite the supra-orbital foramen, and increased when she laid on that side. Following her occupation as a shoebinder, she had, many years since, been accustomed to press the left side of her head against an article of furniture. This gave rise to a tumour here, which suppurated, and the resulting sore was obstinate in healing. On touching the cicatrix which this left, a sudden and violent frontal pain was felt. Blisters were applied over the cicatrix, and galvanism employed in the course of the third pair, but all without success.

CASE III. A pensioned soldier, after having been exposed to damp, had suffered horrible paroxysmal pains at the root of the nose, and near the supra-orbital foramen. After a certain time these ceased, and were followed by the complete descent of the eyelid, the globe of the eye being also drawn outwards and the pupil dilated.

CASE IV. Louise Heberard, æt. 33, had enjoyed good health until she worked as a dressmaker in a cold, damp apartment. In June, 1844, she was seized with toothache on the left side, and then with pains along the left eyebrow, and eventually opposite the supra-orbital foramen. Severe pains were also felt at the root of the nose, and near the angle of the jaw. The left eye became drawn inwards, and she saw double. In May, 1845, the upper eyelid fell, and the eye which had been drawn inwards now became drawn outwards. Tactile sensibility of the left side of the face and head was abolished. The sense of smell was gone, on the left side, as that of taste at the anterior part of the tongue. During mastication, the patient often bit the left side of her tongue, and she articulated so imperfectly as to be understood with difficulty. She was much troubled with confusion of the head, and could not guide herself unless the left eye was closed, on account of her double and confused vision. No means that were tried gave her more than partial relief.

CASE V.—A man, in M. Gendrin's ward, while employed on a railway, had received a blow on the forehead, which induced violent pains radiating towards the surrounding parts. Upon his admission, long after the accident, pressure upon this point still caused some pain; and several months after the existence of these neuralgic pains, the upper eyelid of the same side fell, and the eye was drawn outwardly.

In these cases it cannot be doubted that the neuralgia of the fifth pair preceded the paralysis of the third. As in the third case the neuralgia may have ceased for a longer or shorter space of time, and then the paralysis may seem to be independent of it, until due inquiry is made. M. Marchal is certain that a great number of cases of paralysis, consecutive to neuralgia may, in this way, be detected.

M. Marchal believes the following hypothesis offers the most probable explanation of the occurrence. The trifacial nerve, and the common motor oculi, meet in the ophthalmic ganglion, the former furnishing it the sensitive root by the nasal branch, the latter the motory root from its inferior branch. It will be admitted that a reflex morbid action may take place within this ganglion, by which the affection, which is expressed in the sensitive nerve by pain or anæsthesia, is transmitted to the motor nerve, in which it is expressed by convulsion or paralysis—M. Marchal says convulsion; for in the first case, the eye was drawn inwards, as it also was at first in the fourth. The symptomatology of the motor, as of the sensitive nerves, is of two opposite kinds; pain and anæsthesia for the latter, convulsion and paralysis for the former; and in this way, prior to the paralysis of the rectus internus, it may have been in a state of excitement, during which the eye would be drawn inwards.

This hypothesis is consistent also with the most plausible theory of the functions of the nervous ganglions—true miniature brains as they have been called, for the regulation of special actions—receiving impressions by filaments continued from the sensitive roots, and conveying these by the motory filaments—presiding over the nutritive phenomena by their gray fibres, and only advertising the brain proper of what is occurring in their localities, under extraordinary circumstances. In this way, the ophthalmic ganglion in particular, would be affected in the relations prevailing between the retina and the iris, and certain muscles of the eye. Advertised of the vicissitudes of sensibility of the retina by its connection with the optic nerve, it reacts upon the iris, harmonising the pupil according to the degree of sensibility of the retina, and acts reflectively by its motory root upon the muscles of the eye, which are influenced by the third pair.

There is, then, besides the perception belonging to the brain, another, viz. a *ganglionic* or *organic perception*.\*

We shall be able to complete this report on Ophthalmic Medicine and Surgery in our next Volume, and to include an Abstract of any new works, discoveries, and improvements, which may reach us to the time of the concluding part going to press.

\* Med.-Chir. Rev., Oct. 1846; from Archives Générales.



### III.

## REPORT ON THE PROGRESS OF MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

BY THE EDITOR.

THE literature of the obstetrical department of medical science has received but few additions since the date of our last Report, in the form of distinct treatises; the only one, in fact, which has reached us, is a volume entitled "Practical Observations on Midwifery," by Drs. M'Clintock and Hardy. In the possession of this work, we consider that the profession has received a most important gift. As a work of reference, it is especially valuable, embodying the results of an extended experience under almost every disease and emergency peculiar to the puerperal state. We shall submit its contents to a careful analysis during the separate stages of the present Report.

It is our duty also to announce the establishment of a periodical publication specially devoted to obstetrical subjects, under the editorship of Dr. Clay, of Manchester. It is, we believe, the first attempt in this country of the kind, but one for which the increasing energy which pervades this branch of science has created an ample field. From the high character of many of the communications already received, and the known industry of its conductor, we argue well for the prosperity of the "British Record of Obstetrical Medicine," and we trust long to see its regular appearance among the list of our exchanges.

The various journals of this and foreign countries have contained, during the past six months, an average amount of valuable essays and communications.—Such of these of value as have not appeared among our Extracts, we shall embrace in the present Report.

#### § I.—*Exhibition of Anæsthetic Agents in Midwifery.*

The use of ether and chloroform, but more particularly the latter, in natural and difficult labours, has caused, for some time past, and still continues to excite unusual attention, and no little discussion has ensued, not only as to its beneficial effects, which but few are disposed to dispute, but also respecting the propriety of annulling the pains of parturition on religious and moral grounds.

In reference to the opposition exhibited by certain well-meaning but mistaken religionists, who would doom woman to the most fearful physical agony which human nature is called upon to endure, fearing lest they should endeavour to controvert what they interpret as the will of God, we have already (Vol. V, p. 336) shown that the whole force of the objection falls to the ground, simply for the reason that no such denunciation as they choose to imagine has been made; but the subject has subsequently been so ably handled by Dr. Simpson, that by way of dispelling any lurking doubts in the minds of our readers, as to the propriety of relieving a suffering woman in the hour of her peril, we shall give a brief recapitulation of his line of argumentation.

It may be premised, that those who object to the superinduction of anæsthesia during parturition, on religious grounds, found their objections upon the words of the curse pronounced by the Almighty after the fall of man. Dr. Simpson shows that these objectors have never troubled themselves to inquire into the real meaning of the words in which the denunciation is framed, but have trusted to the common translation, without considering that there is a possibility of more or less of the passage having been misinterpreted.

With respect to the words themselves, it may be stated, as Dr. Simpson remarks, that the curse is triple, referring not only to the woman, but to the serpent and to the ground.

Now, God himself shows that, in the case of the woman and the ground, the curse is not immutable, for he promises its removal; as in Deut., vii, 13, "I will bless the fruit of thy womb," &c.; and again, xxviii, 4, "Blessed shall be the fruit of thy body, and this the fruit of thy ground."

Again, Dr. Simpson shows, if we are bound to take the curse *literally*, we must do so in its whole extent, and if it be sinful to endeavour to counteract one portion of it, it is so also with the other. Not only, then, must we refuse to assuage the pains of labour, but we ought not to cultivate the earth; for, in causing it to bear corn, we in so far counteract the Almighty fiat, that it should bear only "thorns and thistles." But who blames the agriculturist if he pulls up these weeds?—Man is also enjoined to eat bread by the sweat of his brow, but no one accuses him of impiety because he employs steam-power and horse-power, and thus saves his own labour.

To proceed with Dr. Simpson's argument—If it be justifiable in the agriculturist to endeavour to counteract one portion of the curse, as regards the earth, it is also allowable to the physician to counteract another, as regards the woman.

But the entire absurdity of the pietistical objections in question is most distinctly shown in the fact that the word, rendered in the common version "sorrow," cannot be made to signify *physical pain*. The Hebrew word ('*etzabh*, or '*itzabhon*) as Dr. Simpson demonstrates, is derived from the root '*atzabh*; the signification of which, according to Gesnerius, is to *labour*, *form*, *fashion*, or, again, to *toil*, to *grieve*; and the noun '*etzabh* is, therefore, he thinks, rightly understood to refer to the *toil* or *muscular effort* necessary for the act of parturition, and not to the *physical pain*. The very same word, in fact, wherever else it occurs in Scripture, evidently refers to *toil*; as in Gen. v. 29, "And he called his name Noah (comfort), saying, This same shall comfort us concerning our work" ('*itzabhon*), &c. Again, Prov. xiv, 23, "In all labour ('*etzabh*) there is profit," &c. &c. It is, therefore, says Dr. Simpson, not an illegitimate deduction, if a certain word ('*etzabh*) occurs as it does in only six Rabbinical passages, and in five of these has no reference to *pain*, but merely *muscular effort*, that in the remaining passage it would also have the same signification. That such a deduction, however, is legitimate, is shown by the fact, that whenever in Scripture the pain of a woman in particular is alluded to, other words are used, viz., *khil* and *khebel*. The references to these words are, Psalms xlviii, 6, "Fear took hold upon them, and pain as of a woman in travail" (*khil*); Jeremiah, vi, 24; Isaiah, xlii, 8, &c. &c.

Again, Dr. Simpson argues, that even if it could not be contravened that the primeval curse did apply to the infliction of bodily pain, still, to suppose that the abidance under the curse is intended, is to nullify the whole testimony of revealed truth as to the intention of the death and sacrifice of Christ, who is expressly stated to have "borne our griefs, and carried our sorrows," and to have offered himself as a peace-offering to the insulted majesty of the Creator, and thus to have averted the penalties of the fall.

He shows, in the last place, that the same absurd objections were made to the introduction of vaccination, as to the abolition of parturient suffering. "Small-pox," observes Dr. Rowland, "is a visitation from God, but the cow-pox is produced by presumptuous impious man. The former, Heaven ordained; the latter is, perhaps, a violation of our holy religion." How puerile do such sentiments now appear! but they are equalled, if not surpassed, in absurdity, by the objections, on religious grounds, to obstetrical anæsthesia.\*

—An objection to the induction of anæsthesia in parturition of a moral nature has also been urged by Dr. Tyler Smith, in his "Lectures on the Mechanism of Parturition." Reasoning from the analogy of the lower animals, many of which are known to exhibit great ovarian or sexual excitement during and immediately after parturition, he considers that the human female would also manifest the same erotic tendencies; were such feelings not kept in abeyance by the acute

\* Answer to the Religious Objections advanced against the Employment of Anæsthetic Agents in Midwifery and Surgery, by J. T. Simpson, M. D., Edin., p. 24.

physical suffering attendant upon the process. If, therefore, he argues, we abolish the pain, we run the risk of allowing ovarian excitement to have full play, and thus become the means of inducing an immodest exhibition, which would be equally painful to all parties concerned. We do not deny that erotic excitement may occasionally display itself in the human female at the period of parturition, as well as in the brute, but we are not disposed to allow that it is so general as Dr. Tyler Smith would insinuate; and, moreover, when such excitement does exist, it is, we believe, more commonly manifested *after* than *during* childbirth, and, therefore, would not be influenced by the exhibition of chloroform, which would only be made during the actual process of the expulsion of the child.

—Among other communications adverse to the use of anæsthetics in midwifery, we may allude to papers by Mr. Barnes\* and Mr. Greaves;† but neither their contents nor the spirit in which they are evidently written entitle them to further notice. These, with the exception of a few isolated reports of unpleasant effects, or failures in the action of chloroform, constitute the main bulk of the opposition which has been brought to bear upon the subject. We shall now proceed to give a short abstract of the evidence which has been adduced on the opposite side of the question.

Firstly. Professor Simpson reiterates his belief in the advantages to be derived in anæsthesia in natural and morbid parturition, stating that since the introduction of ether, and previously to his discovery of chloroform, he had used the former, with few and rare exceptions, in every case of labour which had come under his care, and with results the most gratifying. He had never, he observes, seen better or more rapid recoveries, nor has witnessed any disagreeable results either to mother or child. His own conviction is that the practice will become very general, if not universal; and that even if medical men oppose it, unless, indeed, they can give better reasons than they have hitherto done, their patients will force them into its use; and this we think a not unlikely result.

—In a more recent publication by Dr. Murphy, the more matured experience of the profession regarding the use of chloroform in midwifery is very favorably portrayed. Seven cases are narrated, well calculated to test its efficacy, being all cases of more than ordinary obstetrical difficulty. The first was a case of contracted pelvis and delivery by perforation; the second, also contracted pelvis and delivery by turning; third, craniotomy, performed on account of the obstruction of a fibrous tumour; fourth, a forceps case; fifth, shoulder and arm presentation; sixth, tumour obstructing parturition; seventh, a forceps operation.

Dr. Murphy, in common with Dr. Snow, divides the effects of chloroform into three stages. In the first there is some excitement, consciousness, and volition remaining, but the sensibility of the nerves being blunted; the pulse not increased in frequency, and the action of the uterus unimpaired, with increased vaginal secretion and relaxation. In the second degree, the patient becomes insensible to pain, the pulse falls, the voluntary muscles are torpid, but the uterine contractions continue, and the vagina remains moist, as in the first stage. In the third degree, uterine action is suspended, the respiration becomes stertorous, and vomiting occasionally ensues. As may be surmised from these effects, Dr. Murphy considers it sufficient to induce only the first degree of insensibility in ordinary cases, and, in such, reserves its use till the second stage of labour; in certain cases requiring operation, he admits of a deeper insensibility.

As the result of a dispassionate inquiry into the subject, he gives the following conclusions:

1st. Chloroform does not interfere with the action of the uterus, unless given in large doses, which is unnecessary.

2d. It causes a greater relaxation in the passages and perineum. The mucous secretion from the vagina is also increased.

3d. It subdues the nervous irritation caused by severe pain, and restores nervous energy.

4th. It secures the patient perfect repose for some hours after delivery.

\* Lancet, April 15.

† On the Use of Anæsthetic Agents in Natural and Morbid Parturition, 1847.



5th. Its injurious effects, when an ordinary dose is given, seem to depend upon constitutional peculiarities, or improper management.\*

—A paper has also been read quite recently before a meeting of the Westminster Medical Society, by Mr. Brown, giving evidence much in favour of the use of chloroform in midwifery. The author, however, while praising its beneficial effects, admits that is not without danger both to mother and child, if given indiscreetly. If it be given too rapidly, for instance, or if the apparatus does not admit a free supply of atmospheric air, some unpleasant consequences are almost sure to follow. Mr. Brown's mode of exhibiting it is in accordance with the recommendation of Dr. Simpson, to give a few inspirations just before each pain, keeping the patient just asleep in the interval. He sprinkles fifteen or twenty drops of chloroform on a pocket handkerchief, and approaches it to the patient's face cautiously. If this quantity is sufficient to subdue the pain, and enable the patient to bear the expulsive effort without inconvenience, he does not on the next pain increase the dose, but uses the same quantity, or even diminishes it, if not required. Mr. Brown is clearly of opinion that chloroform possesses not only anæsthetic properties, but that in small doses it actually excites uterine contractions. In reference to the ultimate effects in the progress of the case, he does not hesitate to state that when employed as above it is decidedly beneficial.†

—Dr. Nevins, in an essay before alluded to, mentions as the general results of the exhibition of chloroform, that, though the labour occupied the usual period, less fatigue and exhaustion ensued, the recoveries were unusually rapid, and the after-pains trifling. The hemorrhage which followed the expulsion of the placenta was also less than usual.

—The individual reported cases in which chloroform has been administered in labour are far too numerous to be mentioned in detail; but we may state briefly that they include instances of natural labour, operative midwifery, puerperal convulsions, &c. Of the latter, three cases are recorded in this country, by Messrs. Clifford, Fearn, and Wilson: and one in France, by M. Richet. In all, the convulsions ceased under its influence.

Little remains to be added to the above accounts of the present state of the interesting question of the employment of anæsthetics in midwifery. It is abundantly evident, as it appears to us, that judiciously administered, excepting in a few cases of idiosyncrasy, it is not only innocuous both to mother and child, but that the different stages of labour are passed through with a diminution of suffering, and also that a positive mechanical improvement in the physical condition of the parts implicated is brought about. It is a question whether its use is to be advised indiscriminately in those cases of natural labour in which the pains are comparatively slight; but we do not hesitate, taking the present aspect of the question to be the true one, to state, that in every case of natural labour, in which the suffering is inordinately great, or whenever operative interference is necessitated, anæsthesia *ought* to be induced; and we moreover consider that the accoucheur who, under such circumstances (no special contraindications existing), neglects to avail himself of the inestimable benefits thus placed within his reach, neglects a large portion of the duties which are attached to his responsible office. We repeat that this is our *present* opinion, based upon present experience of the effects of anæsthetic agents; what modifications in these views may be induced by the further investigations of the profession remains to be seen.

## § II.—*Diseases of Females unconnected with Pregnancy.*

1. *Lymphatic Tumour of the Breast.*—Under this title Dr. Milman Coley describes a disease of the female breast, characterized by a painful swelling, consisting of several cord-like indurations, evidently located in the absorbent vessels. He states, that the tumour may readily escape detection upon a superficial examination, but can always be recognized by taking the part between the finger and thumb. The absorbent glands in the axilla sometimes sympathize, but these engorgements

\* Chloroform in the Practice of Midwifery, by Edward Murphy, M. D.

† Lancet, April 29.

disappear after the original disease has subsided; the lymphatic swelling in the breast also frequently retires, leaving no vestige behind it. In extreme cases, however, a permanent thickening takes place, occasioned by the deposit of lymph in the cellular membrane. This disease usually attacks females between the ages of fifteen and thirty-five, and is liable to recur repeatedly, where the constitution is in the peculiar state predisposing to it. This condition is one of comparative emaciation, accompanied with irregular or deficient menstruation, depression of spirits, and general debility. Hence, suckling and chlorotic women are most frequently the subjects of attack. In some instances, the patients are inclined to attribute the origin of the disease to external violence; in the majority of instances, however, if not in all, it has appeared to proceed from imperfect menstruation. In one instance, in which the author had an opportunity of examining the uterus in a patient labouring under this disease, he found the posterior portion adjoining the cervix in a state of congestion, presenting to the finger a doughy or anasarous feeling. The size of the tumour in the mamma varies from that of an almond to that of an adult thumb; and the pain and tenderness attending it are of a remittent character. In some rare cases it attains nearly the size of a pullet's egg in large and plethoric mammæ.

One of these tumours, which was removed at the earnest solicitation of the patient, who had suffered severely from repeated attacks of the disease, was found, on examination, to consist of thickening of the coats of the lymphatic vessels, imbedded in a stratum of condensed cellular membrane.

The affection is considered by the author to depend on a defective state of the general health, and more particularly upon an imperfect discharge of the uterine functions. Its duration is uncertain, often returning, and as often subsiding, in some cases; in other and more severe cases, it terminates in painful and obstinate ulceration, which, in external appearance, has a considerable resemblance to that proceeding from scrofula, the absorbent glands in the vicinity being enlarged, tender, and painful, and the discharge copious. Before ulceration commences, the cellular membrane subjacent to the skin becomes indurated; this induration is gradually softened, the skin assumes an inflamed appearance, and a small, chronic, scrofula-like abscess is the result. The ulcer which follows resists all local treatment until the proper constitutional remedy is adopted.

*Diagnosis.*—The discrimination of this disease from others resembling it is not difficult. From the chronic, mammary tumour, described by Sir A. P. Cooper, it may be distinguished by the pain and extreme tenderness, by the vitiated state of the patient's health, by the absence of lobes and of any cyst, and by the disease invading the breasts of suckling women more frequently than those of virgins. The condition of the uterus, too, is widely different; in the mammary tumour, a state of excitement prevails: in the lymphatic tumour, a deficient circulation takes place in that organ, manifested by the discharge of an imperfect secretion, or false membrane, from its mucous surface.

From the irritable tumour, and neuralgic state of the breast, this disease may be known by the transverse, parallel, or anastomosing, cord-like bands, which are always present, by the remission of the pain and tenderness, and by the latter symptoms being confined, as far as regards the breast, to the immediate locality of the tumour. The diagnosis in the examination of very large breasts is sometimes difficult.

*Treatment.*—When the pain and tenderness are excessive, leeches and evaporating poultices may be applied to the integuments over the tumour. In general it will be found unnecessary to adopt any local remedies, as the pain is not acute, but usually of an aching kind, like that accompanying rheumatism or phlegmasia dolens. The patient should take some preparation of iron twice daily, have the bowels relieved by an aloetic aperient, if needful, and use a generous diet, and gentle exercise in the open air. Should suckling have been long continued, the infant should be weaned, especially if the patient has been the mother of many children. By attending to these directions the tumour will entirely disappear in a few weeks, or all uneasiness will be so far removed that the patient will feel no inconvenience from it, unless the constitutional and uterine derangement should recur.\*

\* *Lancet*, May 27, 1848.

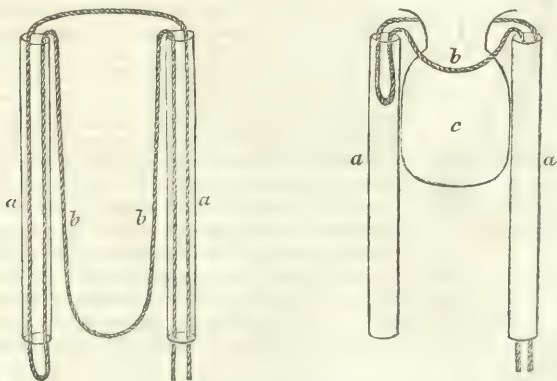
2. *Preternatural Elongation of the Cervix Uteri*.—The same writer mentions as an occasional consequence of passive congestion of the uterus, a remarkable elongation of its neck, which becomes not only extended in length, but also increased in thickness, so as to resemble the teat of the cow. When it admits of relief from medicine, he finds the ioduret of iron, with rest, in the recumbent posture, combined with support, by means of a soft sponge, sufficient to effect a cure; and when the case is rebellious to this treatment, he advises the superfluous part to be amputated, which, he states, may be done with safety. Two cases are related illustrative of both modes of treatment.\*

3. *Polypus Uteri*.—Dr. Mitchell reports a case of uterine polypus, in which the ligature was nine days in cutting through the pedicle, and was accompanied by severe hemorrhage. He has likewise some comments upon the diagnosis of the disease and the application of the ligature, which we do not find to include any remark either of novelty or interest, beyond the recommendation to have each extremity of the cord armed with wire a foot long, by which means it is made here readily to traverse the canula.†

—In a communication to the Medico-Chirurgical Society by Dr. Locock, entitled "Peculiarities of Polypus of the Uterus," the author calls attention to a small variety of polypus which may be attached so high in the cervix as to be scarcely reached, and which is a frequent cause of profuse menorrhagia. For the extraction of these he has had an instrument constructed like a gouge, by means of which he removes the morbid growth. This gouge is inclosed in a canula, and is made to protrude by a screw in the handle. The canula being passed through the cervix, its cutting edge is pressed against the base of the polypus, and it is gently worked half round till it cuts through. In reference to the incision of larger polypi, the author speaks strongly of the advantage of twisting the pedicle two or three times round previous to using the cutting instrument; stating that since he had adopted this precaution he had never met with troublesome hemorrhage.

In the discussion which followed the above remarks, Dr. H. Bennet mentioned the subject of the fetid discharge which frequently remained after the polypus had sloughed away, and which is commonly supposed to come from the peduncle. This opinion Dr. Bennet had satisfied himself was incorrect, but that it in reality proceeded from ulceration of the mucous membrane surrounding the peduncle. This fact he considers to have been previously unknown.‡

4. *Simple Method of applying a Ligature to Uterine Polypi*.—The recommendation of this method is its simplicity. M. Favrot, who mentions it, takes two gum-elastic catheters, and cuts off the end of each just above the eye; he then doubles a piece of silk, of convenient length, and inserts the loop into one catheter, and the two



aa catheters; bb loop; c polypus.

\* British Record of Obstetrical Science, No. 1.

† British Record, Nos. 1 and 3.

‡ Reported in Lancet, May 6.



ends into the other, and brings each extremity out of their lower end. This being done, the next step is to separate the two threads between the upper ends of the catheter, and to bring one down in the form of a loop, leaving the other, which is carried up to the pedicle of the tumour, as in the ordinary operation. The application then is as follows:—

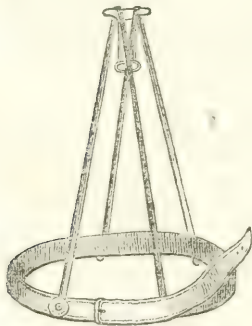
The catheters, or sounds, together with the interposed thread, are carried up to the base of the tumour, the thread forming the loop being held on each side with the respective catheters. This being done, the loop is allowed to glide over the tumour, the two catheters are transferred to one hand, and the two ends are drawn down so as to tighten the loop, which eventually passes entirely out of the sound which contained it, and encircles the pedicle. The empty catheter is then removed, and the ligature fastened at the base of the other.\*

This description is rendered more intelligible by a reference to the annexed diagram. (See page 257).

[We have lately tried this plan, but did not find it by any means so simple as it appears. There was great difficulty in getting the thread to run freely through the sound, and still greater in fixing it sufficiently firm afterwards. We were obliged at last to use Grooch's instrument.]

5. *New Form of Pessary for Prolapsus Uteri.*—Dr. Reid has contrived an instrument which he calls the “womb supporter.” It is formed of two separate steel springs, very narrow at the ends by which they are joined together; the free extremities being each one inch and three quarters broad, convex externally and concave internally, so as to admit of cork being attached to it; and the whole being covered with elastic gum, it has no sharp edge. The two narrow ends of the springs are fastened together by an intervening piece of ivory or wood, so formed as to allow the broader extremities to separate from each other to the extent of two inches and a quarter at their outer surfaces. The two free ends are pressed together when introduced into the vagina, and are then allowed to expand, and to become applied to either side of the cervix uteri. The instrument is then gently pushed up, until its narrow end is at the vulva, thus raising the womb with it at the same time. (A second form of the instrument has a contrivance by which the ends can be easily drawn together, and the introduction as well as the extraction of the instrument facilitated.) A button is fixed to the connecting piece of ivory; and to this button a loop of vulcanized India rubber is attached, through which a T bandage, riband, or other guard can be attached or fixed to the stays.†

—A new form of uterine support has also been invented by Mr. Scholefield, of which the following is a description and representation.



*Description.*—The composition is porcelain; the pillar is about three inches in length, circular, and half an inch in diameter; the top is circular, and made of various sizes, being hollowed into a cup-like cavity on its upper surface, for the reception and support of the labia uteri; the bottom is of an oblong figure—its angles rounded, measuring in length an inch and a half, and in breadth half an inch, having two small oblong holes in it, equidistant from the extremities, through which straps pass to be fixed to a belt around the patient's waist. The straps are composed of vulcanized India rubber, about twenty-four inches long, half an inch in breadth, and one eighth of an inch in thickness. There is one strap in front, doubled on itself at the hole in the bottom of the pessary, and its ends are buttoned to the belt: a similar arrangement exists for the back strap. The belt is of a suitable length and breadth, has a buckle at one end, and four buttons on it.

*Application.*—The belt is to be applied around the waist with sufficient firmness to prevent its slipping downwards. The buckle is to be placed in front of the abdomen, above, and immediately opposite to the umbilicus; and if the belt is

\* *Revue Médico-Chirurgicale*, Jan. 1848.

† *Lancet*, May 6, 1848.

‡ *Ibid.*

of a suitable length, the buttons front and back will be exactly opposite each other. The distance between the two front buttons should be three inches, and a similar space between those at the back. When the pessary is applied, the lower part of the pillar should press a little against the fourchette, and the straps, when of a proper length (the length required varies in different cases), should allow the bottom of the pessary to be from a quarter to half an inch from or below the vulva; for if the bottom of the pessary is immovably fixed in consequence of the straps pulling it so tightly to the vulva as to prevent the slight degree of mobility necessary, (if the case be one of procidentia,) there will be a danger of the uterus slipping from the top of the instrument; but this untoward accident may with certainty be avoided, if the above direction be acted on when the pessary is applied.\*

7. *Amputation of the Cervix Uteri.*—A case is recorded by Mr. Moore, of Derry (U. S.), in which  $2\frac{3}{4}$  inches of the cervix were removed in a young female, æt. 27, for suspected cancerous degeneration. The patient did well.†

8. *Retroflexion.*—This subject, which we have noticed in Article 8 of the "Abstract," may be continued by a notice of two essays, which have subsequently appeared, by Dr. Protheroe Smith and Dr. Simpson.

—Under the title of "Flexions, Torsions, and Malpositions of the Uterus," Dr. P. Smith has published a paper in the "British Record," in which he expresses his opinion as to the great frequency of this affection, and the facility with which it is confounded with tumours of the organ. The displacement, he observes, may occur before puberty, but is more common after menstruation is established. The extent of the flexure varies: sometimes is very slight, at others so great that the increased fundus may be felt as low as the os. Of the symptoms and means of diagnosis, an accurate account is given by his former pupil Mr. Hensley (see "Abstract," Art. 84), and it is therefore unnecessary to repeat Dr. Smith's description of them, which is for the most part the same.‡

—In his latest communication on the same subject, Dr. Simpson makes no distinction, excepting one of degree, between "retroflexion" and "retroversion," believing such distinction to be an unnecessary refinement; in this he differs from Dr. P. Smith, Dr. Rigby, and others, who speak of the two forms of displacement as essentially different in nature, causes, and symptoms. "Practically," says Dr. Simpson, "there is no true difference between these modifications of morbid position of the uterus," and he therefore includes both degrees under the generic term "Retroversion." [It is with deference that we venture to differ from so high an authority as that of Dr. Simpson, but we cannot avoid entertaining the opinion that some further distinction than that of degree is to be drawn between retroflexion and retroversion, although some of the mechanical symptoms may be identical in the two varieties of displacement. It must, for instance, in reference to the condition of the uterine circulation, make a vast difference, whether the entire organ be displaced backwards (retroversion), or whether the body of the organ is bent upon itself (retroflexion); in the former case the axis only is altered, and it may be conceived that the uterine circulation would be comparatively unimpeded; but in the latter case, in which the fundus is bent at more or less of an acute angle, we may equally readily imagine that considerable obstruction is offered to the return of blood from the lower segment of the cervix more especially, and hence is established a greater tendency to engorgement, if not ulceration of the lower lip.]

Dr. Simpson divides the symptoms of retroversion or retroflexion into two classes, *functional* and *physical*. The functional symptoms are stated to be of hysterical or dyspeptic character, with local neuralgic pains in the breast, or some portion of the vertebral column; from mechanical obstruction of the displaced organ, there is also more or less constipation. Occasionally, the bowel is irritated, and mucous or fibrinous matters are expelled. The bladder is irritable, and there is sometimes incontinence of urine. There are symptoms of weight, tension in the uterine region, with pains down the thighs, which are much aggravated by exercise and the erect posture. The menstrual function is not in all cases morbidly altered, and when it is so, it is variously affected; in some cases being too

\* Lancet.

† Boston Med. and Surg. Journal.

‡ Nos. 1 and 3.

profuse, in others too scanty. When a patient with retroverted uterus becomes pregnant, abortion is very apt to occur. But it is also often a cause of sterility; and Dr. Simpson has seen a permanently retroverted uterus in the unimpregnated state, in those instances in which women have borne children at intervals of several years.

The physical signs of retroversion are chiefly such as are made out by the touch and the use of the uterine sound. The speculum, in Dr. Simpson's opinion, does not assist the diagnosis in any respect.

On an accurate vaginal examination, the fundus of the uterus is felt as a globular tumour, between the os and the rectum; it is smooth and ovoid, more or less sensitive to pressure. The os and cervix may be displaced forwards, or remain nearly in situ. The tumour, felt in the recto-vaginal pouch, may be known to be the fundus uteri by tracing the continuity of structure with the finger; but, as Dr. Simpson states, this alone is very liable to lead to error; for if the uterus is retroflected at an acute angle, the continuity is lost at the point of flexion. Other means, therefore, become necessary, and a ready mode of exploration is offered by the uterine sound. This instrument has the configuration of a slender male catheter, fixed in a handle, and marked by notches indicating inches, so that the length of the uterine cavity can be accurately measured. The use of this instrument, as a means of diagnosis in retroflexion, depends upon its enabling us to ascertain the direction of the uterine cavity, which is found to point backwards and downwards, instead of upwards and forwards. A more minute description of the method of using this instrument is unnecessary, as it is given in sufficient detail by Mr. Hensley. (*Vide supra*, p. 136.)

Retroflexion of the unimpregnated uterus is, however, not only often entirely overlooked, but it is often mistaken for other lesions. The principal sources of error are thus pointed out by Dr. Simpson:

1st. *Pregnancy*.—Dr. Simpson has frequently seen the retroverted fundus mistaken for the fullness in the cervix induced by early pregnancy; a lamentable instance of which he alludes to.

2d. *Fibrous tumour*. This is a frequent source of error. The functional symptoms are the same, and there is the same continuity felt between the cervix and body. The introduction of the bougie at once clears up the diagnosis by passing backwards into the apparent tumour, thus showing it to be the retroverted fundus.

3d. *Ovarian tumour*.—When the ovary is enlarged, it almost always first grows downwards into the recto-vaginal space; in this state it may be mistaken for the retroverted fundus. Here, again, the case is rendered obvious by the sound passing in a normal direction.

4th. *Pelvic cellulitis*. 5th. *Extra-uterine conception*. 6th. *Organic disease of anterior walls of the rectum*. 7th. *Stricture of the rectum*.—In each of these states, the uterus is found to be normally situated, as indicated by the sound.

The organic state of the uterus in retroversion, is stated by Dr. Simpson to be variable. He has seen it co-existent with fibrous tumour, but more frequently the uterus is merely hypertrophied. In a large number of cases the organ is not at all increased in size, and in some few it has been found even smaller than natural.

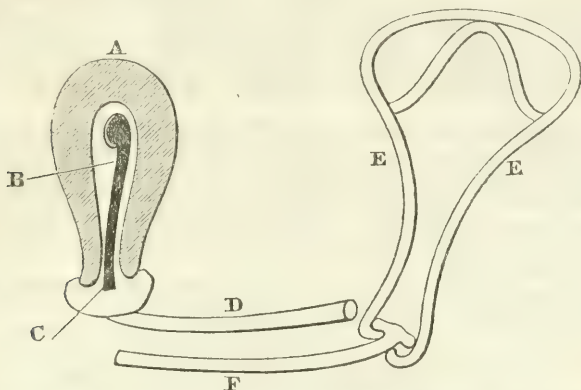
The treatment of retroverted uterus, as laid down by Dr. Simpson, includes three indications—first, the removal of any coexistent morbid condition of the uterus, as engorgement, and by appropriate means; second, the restoration of the misplaced organ, by means of the sound, and then by the retention of it in its normal situation. This is the most difficult part of the treatment, and requires, in most cases, the support of a special apparatus which Dr. Simpson has devised, and of which we give a sketch below.

This form of uterine pessary is made up of two parts, an internal part, provided with a stem (B), a bulb or ball (C), and a vaginal curvilinear tube (D), and an external part, consisting of a wirework frame (EE), about five inches long and three broad above, gradually tapering to half an inch below. To the lower extremity is attached a curvilinear rod (F), made to fit the vaginal tube (D).

The application of this instrument is as follows: The internal portion is first passed up the vagina, the stem entering the uterus (A), which is then replaced by turning the concavity of the instrument forwards, as in the case of the uterine sound. This being done, the solid vaginal portion (F) of the external part of the



apparatus is slid into the vaginal tube (D), and the framework then comes against the pubes, to which it may be moulded; the two vaginal portions work after the fashion of a trochar and its canula. When required to be withdrawn, the pubic portion is first bent back, then the vaginal pieces unlocked and removed, and lastly, the canula and stem extracted.



It might be expected, and with some reason, that the presence of this stem in the cavity of the uterus would cause inflammatory symptoms, but it appears, from Dr. Simpson's account, that such is the exception rather than the rule; he has seen it worn for six months without inconvenience. In cases which cannot bear the pessary, he contents himself with reducing the irritation by leeches, and belladonna pessaries, followed by tonics. The abdominal bandage with perineal support is also in such cases found to be beneficial.\*

—Two cases of retroflexion of the uterus in the unimpregnated state are reported by Dr. Flamm, of Warsaw, but offer no points of special interest. The narrator appears familiar with Dr. Simpson's writings on the subject, but makes no mention of the uterine supporter.†

### § III.—Pregnancy—Labour—The Puerperal State.

9. PREGNANCY.—*Signs of—Obstetrical Auscultation.*—Professor Hohl,‡ of Halle, has contributed an article on this subject, the details of which, from their importance, we give at some length.

*Region in which the sounds are heard.*—From former observations made on 200 pregnant women, the author determined that the pulsations of the heart are normally heard in the left abdominal region, while the placental souffle is heard oftener on the right side than on the other; these results he further confirms by fresh observations, 500 in number. Of these, in 316 cases of normal presentation, the foetal heart was heard on the left, 159 times on the right. The placental souffle was perceived on the right 256 times, on the left 158 times; on both sides and below 50 times, of which 13 were instances of placenta prævia.

*The relations of the two orders of sounds.*—In the 316 cases in which the foetal heart was heard to the left, the utero-placental souffle was heard on the right in 256. In the 168 cases in which the souffle was on the left, the foetal heart beat 159 times on the right. The two sounds were on the same side in 102 instances—the souffle was heard below and on both sides 50 times.

*The seat of the utero-placental souffle.*—M. Hohl places this at the spot corresponding to the insertion of the placenta, for the following reasons:

1st. In 21 cases of artificial delivery, the placenta was fixed where the souffle had been heard.

\* The Dublin Quarterly Journal, May 1848.

† Zeitschrift für die Gesamte Med., Feb. 1847.

‡ Neue Zeitsch. für Geburtzkunde, vol. xxii. 1847.

2d. In 15 cases in which the placenta was implanted over the cervix, the souffle was heard very low down.

3d. In 90 cases the insertion was verified by post-mortem examination.

4th. In 8 cases where turning was practised, the seat of the placenta was ascertained by auscultation.

5th. In a case of extra-uterine foetation, the pulsation of the foetal heart being heard on the left side, and the placental bruit on the right, it was found after death that such was the position of the foetus and the after-birth respectively.

*Auscultation in multiple conceptions.*—Twins may, according to the author, be always diagnosticated, unless one be dead, or the one lie exactly behind the other.

*Auscultation in reference to the position of the fetus.*—In 290 first occipital presentations, the child's heart was heard to the left in 281, to the right in 5, not heard at all in 4. The placental bruit was heard to the right in 251, to the left in 30, below in 9. In the second occipital position, the heart was heard on the right side in 132 out of 148 cases, to the left in 10, unheard from death of the foetus in 6. The placental bruit was found 90 times on the left, 38 times to the right, 8 times below, in 12 it was not heard.

From these results it is clear, that in most cases the foetal heart is heard on the left in the first cephalic position, and to the right in the second.

In presentation of the face, the diagnosis is less precise; in 6 cases of first facial position (front to the left), the heart was heard on the left in 3, on the right also in 3. In two cases of second position, the heart beat to the left, the placental souffle was heard to the right.

In *shoulder presentation*.—In 7 cases of presentation of the right shoulder, head to the left, the back to the front, the heart was heard immediately above the pubis.

The author finally concludes, that though pulsation of the foetal heart is an indisputable sign of its life, the absence of these pulsations is not conclusive of its death. The placental bruit may persist some time after the death of the foetus.

[By a comparison of the above results with those of Depaul ("Abstract," Vol. VI. p. 251), it will be seen that a considerable difference exists in the opinions of the two writers, especially in reference to the site of the placental bruit.]

10. *Fatal Movements.*—There is no opinion concerning the condition of uterogestation more generally diffused, than that which attributes the movements felt at a certain epoch in pregnancy to active motions of the foetus; and so conclusive has this evidence been considered of the vitality of the child, that operations have been performed solely on the testimony so afforded. In one of his very interesting lectures on the Physiology of Parturition, Dr. Tyler Smith ventures to call this common opinion in question, and to affirm that these movements do not depend upon the foetus, but are true peristaltic movements of the uterus itself. His reasons for thus thinking are these. In the first place, these movements are sometimes felt as early as the fifteenth week, when the possibility of their being produced by the foetus is out of the question. Again, the movements are often so intricate, and points at which the apparent contact of the foetus takes place so numerous, that they could not be produced but by the simultaneous movements of several foetuses. The emotions of the mother also have considerable influence over them, which is more consistent with their uterine than their foetal origin. The same may be said of the effect of cold to the abdomen. The movements are moreover felt when subsequent events prove the child to have been dead at the time, also when the uterus has contained hydatids. On the other hand, they have been absent, and the child consequently pronounced to be dead, when it has been born alive.

Dr. Tyler Smith further remarks, that the foetal limbs are often marked by indentations showing the continued pressure of one upon the other. This is also incompatible with the frequent change of position. Again, asks Dr. Smith, what motor power could excite this, in some cases, almost perpetual motion? Volition, or cerebral voluntary movements, cannot take place before respiration. [Is this certain? En.] Emotion is equally wanting: the reflex action too must be obscured by the protection afforded by the liquor amnii, and, moreover, the movements are equally strong in anencephalous foetuses. For the above reasons, the author concludes that the movements are peristaltic and uterine.\*

\* Lancet, March 11th, 1848.

11. *Kiestein as a Test of Pregnancy*.—Dr. Golding has published an elaborate paper, in which he seeks to establish the just value of this sign. He commences by noticing in turn the several indications usually relied upon, as auscultation, state of the breasts, suppression of the menses; and he proceeds to the consideration of kiestein in a series of sections, embracing the several questions of interest connected with its formation.

The presence of the sound of the fetal heart is, of course, the most unequivocal sign of pregnancy; but this is only available after the fourth month. The placental souffle he shows to be less trustworthy. Of the state of the breasts, he observes that no indication can be more equivocal. His conclusions on this point are as follows:

1st. These conditions are equivocal after first pregnancies, seeing that the areola has undergone changes in colour, is increased in size, and has its follicles enlarged; these states remain permanent, though if the mammæ be observed during subsequent pregnancies, these characters may be better marked; it is only comparison, therefore, that will avail for practical elucidation.

2d. If the changes induced by utero-gestation are permanent, diseases of the uterus, by affecting the breasts sympathetically, may induce congestion and other changes in them, similar if not identical with those produced by pregnancy.

3d. In some rare instances, the changes described by Dr. Montgomery are absent even in first pregnancies; the areola remaining unchanged, and the mammæ flabby, till the commencement of lactation.

4th. In persons of fair complexion, the areola may be increased in extent, and have its follicles hypertrophied, without material change of hue.

5th. In those of dark complexion, the areola is naturally of a darker colour, and has its follicles better developed than in fair persons.

6th. During functional derangements of the uterus, the breasts have been noticed to undergo changes not readily distinguishable from those existing during gestation.

In drawing practical deductions from the suppression of the menses, Dr. Golding takes the following circumstances into account:

1st. Whether or no the cause of suppressed catamenia during utero-gestation be due to impregnation; or to other causes, in which, however, certain of the phenomena also attending pregnancy co-exist.

2d. That in some females, the menses are not suppressed during pregnancy or during lactations. The menstruations occurring under such circumstances, whether uterine or vaginal, and whether dependent upon normal or abnormal causes, is attended with the same physiological effects, as in ordinary menstruation, both during its occurrence and accidental suppression.

3d. Any functional derangement of the uterus or other organ reacting upon that viscus may so affect it as to cause suppression of the menses.

4th. Sometimes the menses, though apparently, are not suppressed, being secreted, but not evacuated. The retention may cause vomiting, enlargement of the abdomen, sympathetic affections of the mammæ and stomach, with other effects also concomitants of the gravid uterus.

5th. That however strong a presumptive evidence of pregnancy cessation of the menses may afford, it can never be certain evidence, unless corroborated by auscultation, or the indications afforded by the urine.

After thus discussing the usual signs of pregnancy, and showing the inconclusiveness of each under certain circumstances, the author next proceeds to the main object of his communication, the value of kiestein as a test.

The chief value he shows to consist in its being available during the whole period of gestation; in its existence alike in first and subsequent pregnancies; its being uninfluenced by the age, temperament, or habits of the female; its being found in pregnancy alone, and disappearing during lactation. When this coexists with amenorrhœa, Dr. Golding looks upon it as the only conclusive evidence of pregnancy before the fifth month.

In his investigation of the cause of kiestein in the urine, the author examines it under two aspects. 1st, as a secretion of the mammary glands; which are eliminated from the kidneys, not as yet being required for the nutrition of the fetus; 2d, in its identity with milk. He then inquires under what circumstances



its presence is most conclusive of pregnancy; what is the reason of its inconclusiveness, and whether kiestein is ever absent in pregnancy, and if so, whether it is really absent or only obscured by other matters?

The pellicle is determined by him to be most conclusive of the existence of pregnancy; when the maternal and fetal systems are in a healthy condition respectively, it is then rarely absent. He recommends that, in searching for it, the urine examined should be that voided some hours after a meal. Sediments of lithates render the appearance more or less obscure, and therefore the most favourable conditions for finding the pellicle are the healthy state of the mother and fetus, a non-sedimentary state of urine, and its alkaline reaction.

The reasons of the inconclusiveness of the appearance of the pellicle as a test of pregnancy are thus summed up by the author.

The kiestein, viewed as a secretion from the mammary glands eliminated by the kidneys, is influenced, as other secretions, by those conditions of the system which derange assimilation generally. Such agencies may diminish or entirely suppress the secretion of kiestein; when diminished, it forms a scanty scum on the surface of the urine, or may be entirely absent as long as the general derangement lasts. A plethoric state of the system also, in which the red lithates abound, influences the secretion of kiestein. The pellicle may be absent while the lithates exist, or be so scanty as not to form a uniform film. The yellow lithates do not interfere with its formation to the same extent.

On the question whether kiestein is ever absent throughout the utero-gestation, the author comes to the conclusion that it is occasionally absent, but only temporarily. He does not think that it is ever absent throughout the whole period of pregnancy. The general conclusions derived from his observations are as follows:

1st. Coetaneous with, or shortly subsequent to conception, the breasts assume a secreting action; the product of which, eliminated by the kidney, forms kiestein.

2d. If this action of the mamma be disturbed it is the result of disease, and may be removed by appropriate treatment.

3d. Kiestein, though not apparent, may still not be absent, but may exist in such small quantities as not to be appreciable.

4th. The essential characters of the pellicle are its iridescence, fatty nature, and cheesy odour. It also prevents the urine becoming putrid for some time.

5th. As the secretion of kiestein is a vital phenomenon, resulting from conception, it is often available before other signs of pregnancy.\*

12. *Vomiting during Pregnancy.*—Dr. Churchill records a most interesting case, in which a lady, who was on the point of sinking from incessant vomiting, was saved by the opportune induction of premature labour. Every possible means were tried before the adoption of this proceeding, but without avail. Although at the point of death when the fetus was expelled, and the retching had been incessant, she vomited only twice after the uterus was emptied, and in a fortnight was convalescent.†

— An instance of death from the same cause is reported by M. Forget. Everything was tried but the induction of premature labour, about which French accoucheurs appear to entertain ridiculous scruples. The life of the woman in question was evidently sacrificed to this absurd point of conscience.‡

— M. Trousseau approves of the belladonna frictions recommended by Bretonneau.§ (See "Abstract," Vol. V. p. 252.)

13. *Superfœtation.*—Several additional cases of so-called superfœtation have been recorded. Dr. Holsbeck mentions one in which two fetuses were expelled; one of six months, the other clearly not more than of six weeks' gestation. In another, by Dr. Windriff, fetuses, one of seven months, and another apparently under six, were both born alive, the former being well; the placenta and membranes were distinct. The author thinks the case unique, inasmuch as the fetuses were born alive.||

— A case, which some may look upon as one of superfœtation, is also nar-

\* British Record, Nos. 1, 3, 5, 7. † Ibid. Nos. 1 and 3. ‡ Gaz. Méd. 15 Mars, 1848.

§ Gazette des Hôpitaux, No. 1, 1848.

|| Journal des Connais. Méd., Dec. 1847.

rated by Mr. Newnham. In this instance the woman was prematurely confined of a stillborn fœtus, and another was distinctly found to present, but uterine action ceased, until the completion of her full time, when she was delivered of a full-grown healthy boy.

Mr. Newnham does not consider this to have been a case of superfœtation, but one in which the uterus threw off one of twins conceived at the same time, and which had accidentally died. The practical inferences he draws from the case, that in cases of premature labour, where one fœtus has been expelled, and a second remains in utero, if the membranes of the latter have not been disturbed, and uterine action has subsided, that the practitioner should not interfere, but wait and see if Nature will not remedy the disorder apparently produced. He justly regards this as a more justifiable proceeding than that of delivering artificially.\*

14. *Extra-uterine Fœtation*.—Cases have recently been reported by Dr. Watson, of Edinburgh,† Mr. Hyde.‡ and Mr. Dalrymple.§ The first proved fatal by rupture of the Fallopian tube. In the second case, labour-pains came on at the end of the ninth month, after which the abdomen subsided, the woman dying of constitutional irritation after a lapse of two months. The termination of the third case was similar.

15. *Retroversion at the Sixth Month of Pregnancy*.—A case is reported by J. Seddon, Esq., the patient aged 38. First pregnancy, but had previously miscarried once. An attempt was made to restore the womb to its normal position, but failed. At the termination of the sixth month, uterine pains ensued, the funis descending through the os. Without any alteration of the position of the uterus, delivery was effected, which after being completed, another attempt to restore the position of the uterus failed. Seven weeks after, the organ being still retroverted, a third unsuccessful attempt was made. Mr. Seddon is inclined to believe that the difficulty arose from the long displacement of the parts, and the organ accommodating itself to the position.||

16. *Imperforate Vagina—Labour*.—An unintelligible case of this kind is related by Dr. Ogden. The female had no external organs of generation, but a firm tumour was seen at the site of the vulva, caused by the presentation of the fetal head. This was divided, and a child extracted. Two years after, she became pregnant, and the artificial vagina being unyielding, it was again incised, and labour completed. It appears that at the age of 19 she had been operated upon for retained menses, but the attempt to establish a vagina failed. The difficulty in the case is in her becoming pregnant the first time, when she had no vagina or other orifice than the meatus urinarius.¶

17. *Abortion*.—A remarkable case, in which abortion was induced in eight successive pregnancies by the irritation of excessive itching of the skin, is reported by M. Maslieurat. A lady, æt. 32, became pregnant for the first time at 21, but suffered but little from the usual inconveniences of her condition, until the sixth month, when, without apparent cause, she was seized with intense pruritus of the whole surface of the body. The legs, thighs, and genital organs were first attacked; but towards the eighth month, the itching extended even to the palms of the hands and soles of the feet. The rubbing and scratching to which she was irresistibly impelled caused premature confinement, with immediate cessation of the cutaneous irritation. The patient again became pregnant, and, as before, ailed nothing till the sixth month, when the same itching returned. This time she miscarried at seven months. The same series of events occurred in all eight times.\*\*

18. *LABOUR. Induction of Premature Labour*.—A new plan of inducing premature labour has been suggested by M. Agostini, of Venice, which consists of making use of repeated vaginal injections of warm water, taking care to throw the stream with some force upon the os uteri. The operation is repeated every six hours, and continued for twelve minutes.††

—A paper on the induction of premature labour has also been published by

\* British Record, No. 8.

† Ibid. No. 3.

‡ Ibid.

§ Lancet, &c.

|| Prov. Med. and Surg. Journal, April 19, 1848.

¶ Brit. Record, No. 1.

\*\* Gazette Médicale, 15 Mars, 1848.

†† Annales de Therapeutique, Mars 1848.

Mr. Turton; but it contains no suggestion or opinion which can be considered as novel.\*

We have now reached a period in our Report in which we can avail ourselves of the extensive fund of information contained in the valuable work by Drs. Hardy and McClintock before mentioned. The first subject noticed by them is—

19. *Natural Labour*.—The authors use this term in the sense given to it by Denman, who considered three circumstances necessary—1st, that the head present; 2d, that the labour be not longer than 24 hours' duration; 3d, that delivery be completed without artificial assistance. The management of such labours being familiar to all, they do not enter at any length upon the subject. They, however, think it necessary to make a few observations on the *use of the binder*, and on *supporting the perineum*.

In the Dublin Lying-in Hospital the binder is considered indispensable. The authors consider that its use promotes the expulsion of the after-birth, and state that in one instance only, during the period embraced in their report, was it necessary to pass the hand into the uterus for its removal.

In guarding the perineum, the authors warn the young practitioner against commencing the support too soon, in his over anxiety. While the perineum is thick and hot, no benefit is derived, but rather the reverse. At this time the authors advise that it be well fomented with a sponge and warm water.

*After-pains* are treated by a full anodyne at bedtime, with castor oil and turpentine in equal proportions in the morning. If they resist this, a turpentine stupe is had recourse to. The authors verify an observation of the late Dr. Joseph Clarke, that women who suffer from severe after-pains are often the subjects of dysmenorrhœa.

The total number of natural labours embraced in the report is 5,852, of which 1,752 were first pregnancies. The deaths were 16. The chapter contains the reports of 29 cases of more or less interest, including cases of puerperal phlebitis, phlegmasia dolens, erysipelas of the labia, &c.†

20. *Tedious and Difficult Labour*.—Drs. Hardy and McClintock arrange their remarks on this subject under two heads, according as the delay takes place in the first or second stage of labour. This division is practically important in reference to prognosis; for the danger in the first case, supposing the membranes to be unbroken, is inconsiderable, compared to what it is in the second.

In all cases of tedious labour, during the first stage, which have come under the authors' observation, the cause is stated to have been almost invariably a rigid os uteri. This condition was also seen to be more common in primiparæ, and in those in whom the membrane had been early ruptured. The treatment of rigid os uteri, followed in the Dublin Lying-in Hospital, consists chiefly in the exhibition of tartar emetic, venesection, and the warm bath. In point of efficacy, the authors consider bloodletting entitled to the first place; but it is not of so general application as tartar emetic. The patients on whom it was employed were generally robust females with full pulse, the os uteri thin, and the head pressing continually upon it. In such, venesection produced rapid benefit.

Tartar emetic is, however, considered the most generally available, and was given in almost every case in the following form:

R. Ant. potass tart. gr. ij.  
Aquæ destillata, ℥vj.  
Tinct. opii, ℥j. M.

Of this a tablespoonful is given every hour, until nausea and vomiting are induced. As it is of importance that labour should be actually commenced before tartar emetic is exhibited, it was not given until dilatation of the os had actually commenced. In doubtful cases bleeding was preferred.

Of opium in spurious pains the authors state that it was never given, unless the spurious character of the pains was distinctly made out, and then not until the bowels had been freely relieved.

The warm bath was not used, unless the other means had failed in inducing relaxation, and not then, if the debility was great, or there was any tendency to

\* Prov. Med. and Surg. Journal, Dec. 15, 1847.

† Op. cit., pp. 6-75.



hemorrhage. The authors think from the evidence afforded by two cases, that the warm bath occasionally injures the fœtus.

Of the exhibition of *ergot* in tedious labours, the authors state that the cases in which it was employed may be arranged in three classes. The first includes cases in which the delay arises from uterine inertia, and where, though the head ceases to advance, there is no disproportion between it and the passages. These are the cases which the authors consider most favourable for *ergot*, and it is with reluctance that they give it in any other, for they are convinced that unless the child be delivered within a certain time after its exhibition, it will undoubtedly perish. The time during which it is safe to act can only be determined by auscultation; but on this subject we cannot do better than refer the reader to a paper by Dr. Hardy, which is to be found in a former Volume. ("Abstract," Vol. I. p. 184.)

The second class of cases embraces those cases in which the fetal head is arrested without any pelvic deformity to account for it. The third includes those instances in which unfavourable symptoms calling for delivery manifested themselves while the fetal heart was still audible, but where the forceps or vectis was inadmissible, from want of space, and from the state of the soft parts being such as would render their employment hazardous, exposing the patient to the risk of laceration and sloughing.

The dose of *ergot* usually employed by the authors is half a drachm of powder, infused in a small cupful of boiling water for minutes, to which, after straining, ten grains more of the powder were added.

The next point connected with tedious labour which the authors touch upon is the use of instruments, premising what they have to say upon the subject by some valuable observations on the general importance of obstetric auscultation, and its particular applicability to the questions in debate.

*Vectis*.—This instrument was often substituted for the forceps, and was applied strictly in accordance with Denman's directions. Where internal action had entirely ceased, and in certain convulsive cases, the forceps was preferred.

*Forceps*.—The short straight forceps has been exclusively used in the Dublin Lying-in Hospital for a period of seven years. The conditions which were supposed to call for its use are stated to be these:—

1st. That the child be alive; when the child is dead the forceps is never employed.

2d. That the head remain stationary within reach of the forceps for six hours at least.

3d. That the membranes be ruptured, and the os uteri fully dilated.

4th. That the ear can be distinctly felt; this the authors consider to be an essential condition for the safe and successful application of the instrument.

5th. That the state of the soft parts denotes the absence of inflammation.

The long forceps was seldom or never used. The occasions on which the perforator and crotchet were employed may be surmised from the tenor of the authors' remarks on auscultation, *ergot*, and the forceps.

The total number of tedious labours included in the report are 259; of these 173 were delivered without instruments; of this number 30 took *ergot*, on account of uterine inertia in the second stage of labour, and only 10 out of the 30 children were born alive; this, as the authors remark, furnishes strong proof of the deleterious influence of *ergot* upon the fœtus, as in nearly every case there was unequivocal evidence of the child's vitality when it was given, and in the great majority delivery took place within two or three hours after its exhibition.

In 52 cases the perforator and crotchet were used; in 18 the forceps; in 16 the lever, or *vectis*.

Of the 259 women, 22 died, 19 of whom were primiparæ.

This section, like the last, is followed by the narrative of the most interesting cases which presented themselves during the period embraced by the Report.\*

—A case of tedious labour, from complete ossification of the bones of the fetal cranium, occurred recently in the practice of Mr. Gosset, by whom it is recorded. Turning was attempted, but, as the head could not be extracted, it was perforated through the mouth, and broken up. The mother died of phlebitis.†

\* Op. cit., pp. 73–161.

† Lancet, Jan. 8th, 1843.

21. *Preternatural Labours.*—Drs. Hardy and M'Clintock's practice in breech and footling presentations is to leave the entire business to Nature until the child is expelled as far as the umbilicus, or, if the breech is the presenting part, until the feet have cleared the os externum; this plan insures a more full dilatation of the parts. The funis is next drawn down, and if pulsating strongly; or, if putrid, they wait for a pain, in order that the shoulders may enter the brim before they attempt to bring down the arms. In doing this they always disengage the arm next the pelvis first, and in other respects follow the usual directions laid down by authors. At the close of the process, however, they vary somewhat from the ordinary practice, for instead of simply extracting the head with the right hand, the occiput is at the same time steadily pushed up with the index finger. This is a practice which, though fully appreciated by Smellie, has been overlooked by later writers. The object of the manœuvre, together with that of depressing the chin, is to bring the head into the most favourable position for passing through the pelvis, by causing the occipito-bregmatic to be the moving diameter, and thereby to obviate delay. In cases of premature birth, the authors do not interfere with the arms.

The total number of preternatural presentations met with in the Hospital were 227, of which 101 were breech. Of these, 37 children were born dead, and three of the mothers died.

Respecting arm and shoulder presentations, the authors' remarks are brief. They deprecate the practice of turning in cases of great difficulty, and where the child is clearly ascertained to be dead; and recommend evisceration and delivery by the crotchet in preference. They have seen much benefit from the relaxing effect of tartar emetic in some cases, given in quarter-grain doses. It is, indeed, their usual practice, in all such cases, to give it before the os is fully dilated, to favour dilatation and constant uterine action. The authors' remarks on the operation of turning we shall give at a future page.\*

22. *Complex Labours.*—Under this head Drs. Hardy and M'Clintock comprise hemorrhage, convulsions, rupture of the uterus, plurality of children, and funis presentations.

23. *Accidental and Unavoidable Hemorrhage.*—The authors insist upon the importance of an accurate acquaintance with the distinguishing characters of these forms of uterine hemorrhage. The essential difference, as usually laid down, depending on the site of the placental detachment, does not, in the authors' opinion, always point out a corresponding difference in practice, nor is it always easy to distinguish between the two at the commencement of the bleeding. In doubtful cases, the authors have sometimes been materially assisted by auscultation, the placental bruit indicating the locality of the placenta; but these cases are admitted to be exceptional. They allude to two signs pointed out by Gendrin as indicative of unavoidable hemorrhage, namely, pulsation at the os uteri, not synchronous with the maternal pulse, but with the rapid beats of the fetal heart, and the impossibility of producing ballottement. For the first of these they have no confidence, but they have on several occasions recognised the latter.

In the treatment of accidental hemorrhage before delivery, the authors rely upon the established practice of puncturing the membrane, if the discharge of blood resists ordinary means. After this has been done, and the bleeding checked, they consider it an advantage that labour should be postponed if the woman be much exhausted, and they have given a full opiate with much benefit.

24. *Unavoidable Hemorrhage.*—Before the os uteri is sufficiently dilated to allow of delivery by turning, the authors have recourse to plugging the vagina, from which, when properly performed, they have derived the best results. Of materials generally employed for this purpose, they give the preference to a silk pocket-handkerchief dipped in oil. They caution the practitioner against leaving the plug in longer than twenty-four hours, and during its retention they insist upon the necessity of paying attention to the state of the bladder, &c.

Of turning in placenta prævia, they advise, in common with the best authorities, that no attempt should be made until the os is sufficiently dilated to offer no material impediment to the hand.

\* Op. cit., p. 190.

25. *Expulsion of Placenta before the Child.*—The authors have had no experience of Drs. Simpson and Radford's plan of extracting the placenta before the child, but by the tenor of their remarks they are evidently unfavourable to it.\*

26. *Opium in Uterine Hemorrhage.*—The remarks of Drs. Hardy and M'Clintock on this point are full of practical interest. They lament, with justice, that practitioners appear to have no fixed principles to guide them in the administration of this drug, and that such opposite opinions are entertained respecting its utility. The perplexity attending the expression of such different opinions as have been recorded may, the authors believe, be greatly removed, by bearing in mind the following uses which opium is qualified to fulfil:—First, it is capable of acting as a powerful general stimulant, and supporting life under circumstances of extreme collapse; for this large doses are required. Secondly, opium possesses the power of arresting uterine contraction, for which purpose it must be given in doses above the ordinary strength. From a consideration of these properties, and a practical knowledge of its effects, the authors state that, in unavoidable hemorrhage, it holds out a prospect of benefit when there has been an alarming loss of blood before the state of the os admits of turning. In this kind of case the opium, they observe, acts in two ways—by recruiting the patient's strength, and by diminishing the hemorrhage, by suspending uterine action.

Another case, in which the authors have noticed the advantage of opium, is when the os uteri is fully dilated; but the prostration is so great that there is a dread of further interference. In such a case, a full dose of opium quiets the patient, and, by allowing time to give nourishment, contributes to the rallying of her powers.

The number of cases of uterine hemorrhage embraced in the Report is 37, of which 8 were unavoidable. (pp. 191-203).

27. *Hemorrhage after Delivery—Preventive Treatment.*—When a predisposition to post-partum hemorrhage is known to exist, a certain course of preventive treatment is adopted at the Dublin Lying-in Hospital, which is described by Drs. Hardy and M'Clintock under three heads, viz., maintenance of a quiet state of the circulation at the time of delivery; a judicious management of the second stage of labour; and, lastly, under certain circumstances, the exhibition of ergot. Of the latter of these, the author remarks that it is most efficacious, and that it may be given at one or other of these periods, viz., when the head of the child is on the perineum, and about to be expelled; immediately after the head has cleared the os externum; and, thirdly, as soon as the insertion of the cord can be felt. Dr. Johnson, a former physician of the Dublin Hospital, prefers the latter time.

Of hemorrhage between the birth of the child and the expulsion of the placenta, the authors consider it unnecessary to speak at any length in respect of the causes—their treatment is to grasp the uterus externally, and thus assist it in expelling the placenta; they prefer this to the endeavour to extract the placenta by introducing the hand. They, however, admit that in some cases the hemorrhage may be so profuse as to render the latter proceeding necessary, as the quietest way of emptying the uterus.

*Hemorrhage after the expulsion of the placenta* is almost always referable to a want of contraction of the uterine fibres, from atony, or the distension of the organ by clots, and in some rare cases from polypoid growths, &c. In the treatment of hemorrhage at this period, the chief means mentioned by the authors are friction and pressure, the application of cold, ergot, and electro-magnetism, and the introduction of the hand into the uterine cavity.

Of pressure, they speak in high terms of commendation. The pressure is to be kept up steadily, taking care, if for the purpose of extruding clots, to get the edge of the hand *behind* the fundus, and to press *downwards* and *backwards*.

Cold is applied by them by dashing a wet towel on the pudenda, nates, and sacrum; they agree with Dr. Lee, that this means is as efficacious, and less objectionable, than pouring cold water from a height upon the naked abdomen. They have also seen benefit from cold enemata; of cold injections into the womb they have had no experience.

Ergot of rye is extensively used in the Dublin Hospital in this form of hemor-

\* Op. cit., pp. 200 *et supra*.



rhage; but the authors have found that, from its depressing influence, it is not admissible when the patient is much reduced.

Of the introduction of the hand into the uterus, the authors remark that it is dangerous in two ways—first, it may extinguish life if the woman be much exhausted; and, secondly, it renders her very liable to be attacked by phlebitis. Dr. Lee entertains the same opinion, and expresses himself still more strongly.

Electro-magnetism is favourably spoken of, as far as the authors' experience warrants them in forming an opinion. The readers of the "Abstract" are, doubtless, fully prepared to admit the powers of this agent, from the testimony of Dr. Radford, Mr. Dorrington, and others, to whose papers we refer them. (See Vol. I., p. 173, &c.).

In the fulfilment of the second indication, that of sustaining the powers of life, the authors' observations respecting the case of stimulants and opium, regulations of the temperature, &c., are eminently judicious.

They make no mention of transfusion, which, we are disposed to think, should always be resorted to when other means fail. Our Extracts contain a very instructive example of its success. (Art. 88.)\*

—While on the subject of hemorrhage, we may direct our reader's attention to an elaborate essay by Mr. Newnham,† which we shall reproduce in our next Volume, and also to cases by Mr. Griffin‡ and Mr. Christie.§

28. *Spontaneous Evolution*.—Two or three additional instances of spontaneous evolution of the fœtus have been put on record subsequently to the date of our last Report.

—Mr. Edwards relates the case of a female, to whom he was summoned in her third labour. On examination, the os uteri was found to be fully dilated, and the arm of the child protruded from the vagina. He proceeded to turn, but the feet could not be brought down, in consequence of the vehemence of the uterine contractions. Under these circumstances, as symptoms of exhaustion began to declare themselves, it was resolved to use the perforator: but, before the instruments could be got ready, the woman passed a large quantity of fœces, and immediately the arm disappeared, and the breech presented. Two or three pains expelled the child, which had evidently been dead some time.||

—Dr. Copeman relates an instructive case of back presentation, with partial spontaneous evolution, which we give considerably condensed. The woman was a delicate person, suffering under mental anxiety, and fearing, from her unusual sensation, that the presentation was not natural. On his first visit, Mr. Copeman could not make out the presentation; but some hours after ascertained that the back was the presenting part, without, however, being able to determine the position of the head or extremities. While preparing to turn, he was surprised to find the back of the neck and shoulders forced into the pelvis. Fearing now that turning would be difficult, he endeavoured to pass his hand over the right side of the child towards the pubes; but while doing so he felt the child recede, and therefore contented himself with raising the pelvis, while the pains forced down the occiput. He thinks, with apparent justice, that had he waited longer the evolution would have been completed without assistance. The case terminates with some excellent practical remarks, for which we have not space.¶

—A third case is related by Mr. Ion,\*\* a fourth, by M. Boureau;†† a fifth, by Mr. Davies;‡‡ and a sixth, by Dr. Borrett.§§

—Drs. McClinton and Hardy state that they have never witnessed the process of spontaneous evolution, as described by Denman, but they have seen several instances of premature births, in which arm presentations were born by the unaided efforts of Nature. In two or three of these cases, the arm remained stationary till after the birth of the breech and legs; in the others, the fœtus was expelled doubled on itself, but the arm did not recede; so far confirming Dr. Douglas's views of the manner in which the process is brought about.||||

\* Op. cit. p. 234.

† Ibid., Nos. 5 and 7.

|| Lancet, Jan. 8, 1848.

\*\* Lancet, Jan. 29.

†† British Record, No. 7.

||| Op. cit., p. 183.

† British Record, No. 5.

§ Ibid., No. 11.

¶ British Record, No. 5.

†† Encyclograph. Méd., Feb. 1848.

§§ Ibid., No. 9, 1848.

29. *Retained Placenta*.—The introduction of the hand for the removal of the placenta is justly regarded by Drs. Hardy and M'Clintock as a proceeding not to be adopted without imperative necessity, and, in hospital practice more especially, often productive of fatal consequences. These authors differ from those who recommend the exhibition of ergot in delay of the placenta. In the Dublin Hospital it was their invariable rule not to exhibit this medicine in the third stage of labour, until the placenta was completely detached. Their reason for this is the impossibility of diagnosing, in each instance, the precise cause of the retention; and, under some circumstances, the action of the medicine would only aggravate the case.

From the great liability to the occurrence of phlebitis after manual extraction of the placenta, it is usual, in the authors' practice, to put the patient under a mild mercurial course immediately after delivery. If any bad symptoms occurred, this was followed by increased activity; but if nothing unfavourable appeared on the third day, the mercury is omitted. This strikes us as a practice worthy of further publicity.

—A case in which the placenta was retained five months is reported by Dr. Hitchcock, in the "Boston Medical and Surgical Journal." The woman aborted at six months; but, on account of some misrepresentation on the part of the attendants, the after-birth was not removed. From this time she had repeated hemorrhages; and when seen by the narrator of the case was greatly exhausted. Suspecting either polypus, or, from the history of the case, that the placenta had been retained, he examined, and found the latter surmise to be correct, by removing a condensed placenta of a pound in weight.

30. *Rupture of the Uterus*.—Drs. Hardy and M'Clintock's chapter on this complication of labour is worthy of the most careful perusal. They commence with the premonitory signs of the accident, which are thus laid down. The possibility of rupture of the uterus may be suspected—

1st. When there are grounds for suspecting the existence of deficiency of space in the hard passages.

2d. When a fixed local pain has existed for any length of time during pregnancy, it should be viewed with apprehension, as Dr. Murphy has ascertained that rupture of the uterus may, in most cases, be traced to lesions already existing, or induced by inflammation.

3d. When, during labour, there are constant and violent uterine efforts after rupture of the membranes, without a corresponding advance of the fetal head. The authors believe that rupture never takes place previous to the escape of the waters.

4th. The occurrence of a crampy pain in the hypogastrium is looked upon by Mr. Robertson as a sign of considerable value.

In the management of threatened rupture, the authors endeavour to mitigate the violent uterine action by a full bleeding, followed by an opiate. Tartar emetic is also sometimes given.

The symptoms which indicate rupture of the uterus are—

1st. A sudden acute pain, totally different from labour pains.

2d. Vomiting of the ingesta, and subsequently of coffee-ground liquid. When this happens, it comes on suddenly, and is accompanied by other signs of ruptured uterus.

3d. Collapse, as in rupture of other internal organs. This, the authors remark, is not an invariable symptom; and they record a case in which the patient walked up stairs into the ward after riding some distance.

4th. A distended and painful state of the abdomen.

5th. Sudden cessation of labour-pains. This does not always ensue, as in some cases the child has been expelled by natural efforts after the rupture has taken place. On the other hand, the labour-pains are known to subside suddenly from various causes.

6th. Hemorrhage from the vagina. This symptom is not regarded as worthy of confidence as diagnostic.

7th. Recession of the presenting part. This they believe cannot take place to any extent, unless rupture has taken place.

8th. The limbs of the child discernible in the peritoneal cavity. When present,

the authors state that this sign is demonstrative; but it may be absent, as the *fœtus* may not escape in some instances.

The fact that the *fœtus* almost invariably perishes soon after the accident also furnishes a source of diagnosis. If in a doubtful case the *fœtal* heart is audible some time after the supposed rupture, it may be considered to negative the supposition. An instructive case in point is related.

The treatment of ruptured uterus is divided into two periods, viz., before and after delivery. Respecting the former, the authors' observations are, for the most part, in accordance with generally received authorities, viz., to deliver as speedily as possible. As the child is generally dead, perforation is preferable to the forceps. In the after-treatment they trust to opium.\*

—Cases of rupture of the uterus have recently been reported by Dr. Coley,† Mr. Brownhill,‡ and by Dr. Smallwood§ (U. S.). Dr. Coley's patient recovered; the other two were fatal, the latter after four days.

—An elaborate essay is in the course of publication by Dr. Trask, in the "American Journal of the Medical Sciences," and Dr. Clay is engaged in reprinting the well-known and important memoir on the same subject by Crantz. We shall give some account of both these in our next volume.

31. *Operative Midwifery—Cæsarean Operation.*—We have two successful cases of this severe operation to record: the first by Mr. Goodman, the details of which, though it occurred same time back, have only recently been made public; the other is narrated by Dr. Valentine Mayer.

Mr. Goodman's case is prefaced by some remarks on the history of the operation, and a table, which we give (p. 273), of all the instances of the operations performed in the British Islands, with their results.

The extreme fatality of the Cæsarean operation is strongly shown in the table, from which it appears that three mothers only recovered, and but one child. The case of Mrs. Sankey is as follows:—

She was the mother of three children, subsequently to which she became the subject of mollities ossium. Her general health, however, was kept good, and she was cautioned against becoming again pregnant. This injunction was not attended to, and Mr. Goodman, in November 1845, received notice that labour had commenced. Examination proved the pelvis to be contracted to a formidable extent, the promontory of the sacrum being propelled downwards, so as to diminish the antero-posterior diameter, and the ischia having become so nearly approached, as together to produce on the outlet the figure of 8. The principal passage was discovered to be seated superiorly between the promontory of the sacrum and the converging ossa ilia; and its greatest diameter from one projection of the bone to another was not more than one inch and a quarter; the least, not more than one inch; and these could only be reached by the finger with the greatest difficulty. The os uteri could not be touched by any manipulation. The remaining passage was contracted to about three quarters of an inch; and the external outlet was also considerably diminished by the junction of the ossa ilia. Having fully explained to the husband the true nature of the case, and impressed upon him the utter impossibility of effecting delivery by the natural means, and that the only chance of saving the life of either the mother or the child was by resorting to the Cæsarean section, Mr. Goodman suggested the propriety of procuring a second opinion for the purpose of corroborating his statements, and Dr. Radford was accordingly fixed upon.

Upon Dr. Radford's arrival, and after due preparations had been effected, Mr. Goodman proceeded to make the necessary incisions, about 3 A. M. The other integument was divided by an incision of about nine inches in length, passing a few lines on the left side of the linea alba and umbilicus. This being effected, the uterus was freely and fully exposed, and he immediately made an incision in its walls to the extent of its former opening; the margin of the placenta was ascertained to correspond with the incisions. Dr. Radford seized the infant whilst he dislodged the head from the uterine cavity: and thus a fine living child was preserved from certain death.

\* Op. cit.

† Prov. Journal, Dec. 29.

‡ Brit. Record, No. 11.

§ Brit. Amer. Jour., Jan. 1848.



TABLE OF THE CESAREAN OPERATIONS PERFORMED IN THE BRITISH ISLANDS, WITH THEIR RESULTS.

No.	Hours in Labour.	Date.	Died Mother.	Died Child.	Recovered Mother.	Recovered Child.	Operator.	Patient's Name.	Locality.	Where recorded.
1	12 days	1789	Dead	Dead	Recovered	Alive	Mary Dinnally	Alice O'Neal	Ireland	Edinb. Med. Essays, vol. v.
2	5 days	1793	Dead	Dead	Recovered	Alive	Mr. Barlow	Jane Foster	Blackburn	Med. Rec. and Research.
3a		1845	Alive	Alive	Recovered	Alive	Mr. Goodman	Mrs. Sankey	Birmingham	Trans. Prov. Assn., vol. iv.
4							Mr. R. Smith	Peterson	Manchester	Brit. Rec. of Obstetrics, vol. i. and Medical Times.
5	7 days	1797	Dead	Dead	Recovered	Alive	Professor Young		Edinburgh	Smythe's Midwifery, vol. iii.
6			Dead	Dead	Recovered	Alive	Dr. White		"	MSS. Lectures.
7		1710	Dead	Dead	Recovered	Alive	Mr. Thompson	M. Rhodes	Manchester	MSS. Lectures.
8		1769	Dead	Dead	Recovered	Alive	Dr. Cooper	Eliz. Foster	Edinburgh	Hull's First Letter.
9	24 hours	1724	Dead	Dead	Recovered	Alive	Mr. Chalmers	Eliz. Clarke	London	Hull's First Letter.
10	2 days	1724	Dead	Dead	Recovered	Alive	Mr. White	E. Hutchison	Edinburgh	Med. Ops. and Eng., vol. iv.
11	12 days	1775	Dead	Dead	Recovered	Alive	Mr. Atkinson	Ish. Redman	Glasgow	ditto
12		1777	Dead	Dead	Recovered	Alive	Mr. Clarke	Ann Lee	Leicester	Hamilton's Outlines, p. 339.
13	3 days	1794	Dead	Dead	Recovered	Alive	Dr. Hall	J. Douglass	Edinburgh	Hull, p. 67.
14	8 days	1794	Dead	Dead	Recovered	Alive	Mr. Kay	Ish. Redman	Wellington	Mem. Med. Society, vol. v.
15	12 hours	1795	Dead	Dead	Recovered	Alive	Dr. Hamilton	Ann Lee	Manchester	Hull's First Letter, p. 162.
16	10 days	1798	Dead	Dead	Recovered	Alive	Mr. Wood	E. Thompson	Edinburgh	ditto
17	2 days	1798	Dead	Dead	Recovered	Alive	Mr. John Bell	S. Holt	Forfar	Hull's Letter.
18	3 days	1798	Dead	Dead	Recovered	Alive	Mr. Wood		Manchester	Mem. Med. Society, vol. v.
19		1798	Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	Mem. Chir. Trans., vol. iv.
20		1799	Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	Hull's Trans. Band.
21		1800	Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	Med. and Phys. Journal.
22			Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	Ed. Journal, vol. viii.
23			Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	Med. Chir. Trans., vol. vii.
24	21 hours		Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	Barlow's Essays.
25		1817	Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	Nerriman, p. 317.
26		1821	Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	ditto.
27		1821	Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	Edinb. Journal, No. 148.
28	18 hours	1820	Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	ditto.
29	34 hours	1821	Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	Edinb. Journal, 1828.
30	19 hours	1821	Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	Lancet, 1840.
31	6 days	1820	Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	ditto.
32		1820	Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	ditto.
33		1820	Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	ditto.
34		1834	Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	ditto.
35		1834	Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	ditto.
36		1834	Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	ditto.
37		1834	Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	ditto.
38		1834	Dead	Dead	Recovered	Alive	Mr. Wood		Edinburgh	ditto.

The placenta was removed as rapidly as possible, and by moderate pressure he succeeded in reducing the uterus to its proper locality.

The disarranged intestines were restored to their normal position by Dr. Radford, whilst the external wound was closed with the interrupted suture, without attempting the application of any ligatures to the uterus. It is scarcely necessary to state, that the ordinary dressings of adhesive plaster and bandage were applied. In an hour or two it was perceived that a portion of intestine protruded between two of the sutures, which was immediately and carefully reduced. On the following day the symptoms were by no means severe, the pulse being 90, tongue clean, skin moist, and the urine evacuated; had some sleep, and the infant was doing well. On the 21st, no alvine evacuation had occurred, but there was vomiting of a black and coffee-coloured fluid. An enema of spir. terebinth. and gruel was given, and not acting, was followed by a magnesia draught, which had the desired success.

The patient's state on the 23d, the second day after the operation, was satisfactory, but the sutures gave way, and exposed the intestines to an extent of six inches; these were speedily covered with lymph, and granulation commenced, and the wound was again brought together. Things progressed favourably till December 6th, when, from imprudently taking some ingesta, which gave rise to flatulence, the adhesions gave way a second time, and bowel protruded. This portion became much distended, and symptoms of strangulated hernia ensued, which were only relieved by the formation of artificial anus.

This untoward complication now occupied all the attention of the patient and her attendants, and many plans were fruitlessly adopted to induce its obliteration. Under a contrivance by Mr. Goodman, it had, however, materially contracted in its dimensions, when, to his grief, it was discovered that the unfortunate woman was again pregnant.

We shall not follow the author through his reflections under this calamity, but content ourselves with the remark, that the course ultimately adopted scarcely required the amount of deliberation apparently bestowed upon it, as but one plan, that of inducing abortion, could be entertained; a second Cæsarean operation being out of the question. For this purpose, ergot, savine, &c., were administered, without inducing uterine action, which, however, ensued spontaneously a month after the discontinuance of the medicines, and a fœtus of two months was aborted. The placenta was detained until the third day, and was then removed in a putrid state by the use of some force. Under these circumstances, it is not a matter of surprise that the woman died with symptoms of uterine inflammation.

*Post-mortem examination.*—On inspecting the body, an orifice, the size of a pin-point, was discovered in the situation of the original wound, and the linen around it was moistened by about six drops of slightly coloured serous fluid. On opening the abdomen, a general glueing and matting together of the arch of the colon and omentum to the adjacent intestines (in an area of the extent of eight or nine inches), and to the cicatrized skin of the abdomen, was observed; which, as will be remembered, was developed from, and healed upon, the exposed peritoneal covering of these viscera. Much flatulent distension of the colon existed, and it was fully proved that no Cæsarean section could have been again performed. The agglutination of the parts through which the incision must have penetrated, rendered the performance utterly impossible. It would have been necessary (as it was in simply opening the body after death) to have dissected the skin from the subjacent omentum; and the dissection must have been continued until the whole of this latter had been completely separated from its adhesions to the smaller intestines; and they, also, would have required separating from each other, before the uterus could have been exposed. Fatal as the case had proved, we could not avoid a feeling of satisfaction that the measures adopted had been directed towards the induction of abortion, instead of reserving the mother for an operation, which would have proved fatal in the very hour of performance. The gall-bladder and duodenum were distended with black bile; and the uterus was empty, and considerably congested at its fundus. The cicatrix of the original incision into the uterus was well defined, and there was no adhesion of the fundus to any adjoining viscera. There were no other decided marks of inflammatory action.\*

\* Brit. Record, Nos. 4 and 6; and Medical Times, May 10th.

—Dr. Mayer's case is that of a female, æt. 29, who had for some time experienced a pain in the sacral region, particularly at the menstrual periods. A tumour was discovered, attached to the sacrum, which encroached upon the vagina and rectum. She was lost sight of from this time until January 5, 1846, when she came back to the hospital in the eighth month of pregnancy. She was again examined, and the tumour found to have enormously increased, filling the vagina, and pushing the perineum outwards; the outlet was also occupied by a continuation of the tumour; the os uteri could with difficulty be felt under the pubes.

Under these circumstances, when labour commenced, the Cæsarean operation was resorted to as the only resource. The infant was extracted alive; the other steps of the operation were satisfactorily performed. The woman went on favourably until the 29th day, and was considered safe as regarded the operation, when she was seized with acute pain in the sacral region. The vaginal tumour increased rapidly, and was distinctly ascertained to be cancerous. From the effects of this she sunk on the 145th day after the operation.\*

32. *Turning as a Substitute for Craniotomy in Contracted Pelvis.*—We gave a brief outline of Dr. Simpson's recommendation of this substitution in our last Report. We have here the opportunity of referring to it more in detail, as given in a series of papers published in the "Provincial Medical and Surgical Journal," and the great advantage afforded by the proposed practice, is said to be the substitution of extraction of the infant by the feet, for its extraction by the crotchet; the delivery of it by the hand of the accoucheur, instead of by instruments; the lateral compression of the head by the sides of the pelvis, instead of the more dangerous oblique or longitudinal pressure by the forceps; and, above all, the transient and not necessary fatal depression of the flexible skull, for the deadly perforation of it. In the first two sections of his long essay, Dr. Simpson records the cases, and affords evidence suggestive of the proposed practice, chiefly based upon the fact, that in certain instances of labours, in which all the children presented by the head were lost, a living child has been born when it presented footling.

The reason of this he next examines, in a chapter on the "Principles of the Proposed Practice," in which he enters with minuteness into certain details respecting the conical form, and particular admeasurements, of the fœtal cranium. His observations are recapitulated in the following conclusions:

1st. The fœtal cranium is of a conical form, enlarging from below upwards, and when the child passes as a footling presentation, the lower and narrower part of the cone-shaped head is generally small enough to engage in the contracted brim.

2d. The hold which we have of the protruded body of the child, after its trunk and extremities are born, gives us the power of employing force sufficient to make the elastic sides of the upper and broader portion of the cone, the bi-parietal diameter of the cranium becomes compressed, and, if necessary, indented between the opposite sides of the pelvic brim, to such a degree as will allow the passage of the entire head.

3d. The head, in being dragged down into the distorted pelvis, generally arranges itself, or may be artificially adjusted, so that its narrow bi-temporal instead of broad bi-parietal diameter becomes engaged in the most contracted pelvic diameter.

4th. The arch of the cranium is more readily compressed into the flattened form by having the former applied, as in footling presentations, directly to its lateral surface, than as in cephalic presentations to the lateral and upper surfaces of the arch.

5th. The duration of labour, and the sufferings of the mother, are greatly abridged by turning, when used as an alternative for craniotomy and the long forceps. The truth of the latter proposition is shown in the fourth section.

In the fifth section, Dr. Simpson considers the relative periods of labour at which the long forceps, perforation, and turning are respectively employed, and shows that as the mother's danger, as well as that of the child, increases with the duration of the labour, and that the circumstances which are considered to justify the use of perforation more especially, do not concur until a late period, while turn-

\* Thèses de Strasbourg, No. 7; Archives Générales, Mars 1840.



ing is justifiable at an early period, the latter is, on this account alone, a preferable substitute, and still more so that it gives the child a chance of life, which is to a certainty abolished by craniotomy. In order to exhibit these particulars, Dr. Simpson narrates two cases from the practice of Dr. Lee, and seven from that of Dr. Collins.

In the sixth section, Dr. Simpson's object is to demonstrate that the indentation produced by forcible extraction of the fœtal head through a contracted pelvis, is not incompatible with life, the establishment of this point being necessary to the argument. This he does by the relation of several cases.\*

[We had arrived thus far in our analysis of Dr. Simpson's essay, when we found that it had not been completed. Under these circumstances, we are compelled to stop somewhat abruptly, but shall not fail to give the remainder as soon as it appears. Anything which can obviate the necessity for the barbarous operation of craniotomy, must be acceptable to the heart of the feeling practitioner in midwifery; and to have a man of Dr. Simpson's experience thus coming forward in the cause of humanity, is in itself an indication, that we may reasonably hope that the day will arrive when craniotomy will be a very exceptional operation.]

33. THE PUERPERAL STATE. *Puerperal Fever*.—Drs. Hardy and McClinton's observations on this fatal disease are so replete with available information, that we shall notice them at some length. They state what is now generally acknowledged, that "puerperal fever" is a complex affection; but that its most frequent pathological cause consists in uterine phlebitis. That this should be the case is not surprising, when we consider that the uterus after parturition is exposed to two of the most frequent causes of phlebitis, namely, mechanical injury of its veins, and the contact of noxious matter. In this respect, in the words of Dr. Ferguson, the interior of the uterus is in the same condition as respects the occurrence of phlebitic inflammation, as an amputated stump. The cases which most frequently determine this fatal inflammation, are stated to be:

1st. Mechanical injury to the uterus by introducing the hand, instruments, &c. No operation is more to be dreaded in hospital practice, than extraction of the placenta.

2d. The detention of portions of the after-birth, which gives rise to a foul discharge, the absorption or contact of which irritates the patient's veins.

3d. Hemorrhage. Loss of blood promotes absorption, and moreover tends to induce a flaccid state of the uterus. It is thus explained why puerperal fever so often follows placenta prævia, two causes—hemorrhage, and the irritation of the hand in turning—being in operation.

4th. Epidemic influence.

The author also allows contagion in its fullest sense.

In speaking of the symptoms, the authors notice their analogy to those of ordinary phlebitis, and consisting of those indicating the local affection, and a second process characteristic of the poisoning of the blood. They consider that it is unfortunately seldom possible to pronounce with certainty on the existence of uterine phlebitis until the second order of symptoms make their appearance, although there may be sufficient ground for suspicion. The symptoms which should excite alarm are, uterine tenderness and pain, preceded by a rigor, foul tongue, depraved or scanty lochial discharge, cessation of milk, rapid pulse. Of these the *rapid pulse is the most constant*, uterine pain may be absent, or only perceptible upon deep lateral pressure, which should never be neglected in doubtful cases.

When fully developed, which it becomes without any abrupt passage from one to the other stage, the disease may be known as follows: the occurrence of rigors, not traceable to any other cause; rapid pulse; peculiar physiognomy; visible arterial action; loss of appetite; profuse perspiration; diarrhœa; sleeplessness; foul tongue; nauseous smell from the breath; muscular tremors; low delirium. Upon these symptoms the authors make the following comments:—

*Rigors*.—This is a characteristic symptom, but may arise from milk fever, &c. When it happens twice or oftener in the twenty-four hours, it almost unequivocally denotes phlebitis. The authors regard this symptom as one which should cause the greatest alarm in the puerperal state.

\* Prov. Med. and Surg. Journal, Dec. 1847; Jan. and Apr. 1848.

*Pulse*.—A short time before the rigor, the pulse usually falls in frequency. On the reaction which follows the shivering, it is considerably accelerated, but generally subsides in a few hours to its former standard. It has generally a sharp, vibrating feel under the finger. Generally, the first symptom of improvement was the subsidence of this sharpness in the pulse.

*Diarrhœa* and a tympanitic state of abdomen are very constant symptoms in the second stage of phlebitis. Even where diarrhœa was absent, the authors have observed an irritability of bowels which required great care in the regulation of the diet and medicine. In restraining the diarrhœa, opium in some form was found most efficacious.

*Vomiting* was rarely seen by the authors in pure uterine phlebitis.

*Profuse sweating* was a constant attendant of the second stage, towards its close.

Respecting the treatment of puerperal phlebitis, the authors properly urge the importance of early recognising the disease. The first stage is met by general and local bleeding, warm bath, and mercurialization. It will be seen by a perusal of the cases narrated by the writers, that much reliance is placed upon the latter; indeed, they observe that recovery was almost certain if ptyalism could be induced. So important do they deem this, that in all those cases in which, from the nature of the labour, or other reasons, the occurrence of puerperal fever was rendered probable, they commence with mercurial inunction a few hours after delivery.

In the second stage, the treatment can only be palliative. Mercury is now inadmissible, unless for the purpose of checking one or other of the secondary inflammations peculiar to the disease. The leading indications they lay down are—1st, to relieve urgent symptoms, as vomiting, diarrhœa; 2d, to support strength by mild diet; 3d, to enjoin short repose of mind and body.\*

34. *Causes of Puerperal Fever*.—Dr. Scanzoni considers that the opinion which attributes the occurrence of this disease to the influence of the condition of the internal surface of the uterus, is too exclusive, and maintains, as a proof of this, that the germs of the puerperal fever may be developed prior to the commencement of labour. This being the case, he seeks for the origin of the disease in the altered constitution of the blood, and as the puerperal *crasis* is developed out of that of pregnancy, he conceives that the special causes of the fever are thus determined. He mentions, in illustration of his meaning, that in those instances which, from accidental circumstances, induce some other constitution of the blood, the pregnant *crasis* is prevented; the patients are never attacked by puerperal fever, and, on the contrary, that when, during pregnancy, females become the subject of any disease which depends upon hyperinosis of the blood, they are very liable to puerperal attacks. The conclusions of this somewhat theoretical essay are to the following effect:

1st. Rawness of the internal surface of the womb is not the only cause of puerperal fever; but that this consists in a peculiar constitution of the blood. 2d. That the constitution, or *crasis*, is indicated by increase of fibrin. 3d. Hypinosis of the blood (deficiency of fibrine) gives immunity against that form of the disease which is accompanied by fibrinous exudation (puerperal peritonitis), but is no safeguard against the suppurative and typhoid forms (phlebitis). 4th. That the latter may arise from absorption of pus from the surface and appendages of the uterus, or from pus developed primarily in the blood from conversion of fibrin. 5th. That the sthenic type may verge into the asthenic during the course of an epidemic.†

35. *Post-Puerperal Metritis*.—Under this term M. Cholmel has been long in the habit of describing a form of metritis, which does not manifest itself shortly after labour, as is the case with ordinary metritis, but at a period varying from eight to thirty days; the principal cause of its production being the resumption of the occupations of life prematurely, before the uterus has regained its normal volume. This organ becomes, under the influence of the metritis, much re-enlarged, while the os uteri is sensitive to the touch, tumid, irregular, and often lacerated. The treatment consists in baths and cataplasms, and laxatives in slight cases, bleeding where the pain and general symptoms require it, and afterwards local resolvents or exutories for the lessening the enlarged uterus.

\* Op. cit., p. 25.

† Pra. Viertelschrift; Monthly Journal, Nov. 1847.

—Dr. Willemin has furnished a very good essay on this subject. He prefers the term *simple idiopathic puerperal metritis*, inasmuch as it occasionally presents itself at a much earlier period than is understood by the term *post-puerperal*; but it is always quite distinct from that form of metritis connected with pyogenic disease. According to the analysis given of ten cases, it is shown that symptoms occurring in some of these may be wanting in others. Thus there are cases in which pain, fever, and abnormal volume are present. 2. In others there are pain and increased size, but no general reaction. 3. Neither pain nor fever is present, but there is normal volume, with sanguinolent lochia, and, in some cases, deep laceration of the os uteri. 4. The rarest form occurs when there is absence of fever and enlargement, while there is pain and sanguinolent lochia. Any of these forms may, and frequently do, become complicated with inflammation of the surrounding cellular tissue of the pelvis, producing iliac phlegmon. The disease is generally, but not always, more acute in proportion as the time elapsed since the labour is short. The neck of the uterus is found to be changed in position, or not to have resumed its normal state; but the author has not observed the sensitiveness described by others. He is disposed to attach much importance to the deep laceration of this part observed in 4 out of 10 of his cases, and easily recognisable in one of them twenty days after labour. The sanguinolent character of the lochia is a symptom to be remarked, and when *iliac phlegmon* complicates the disease it occurs usually on the right side only. Bleeding, linseed cataplasms, and emollient clysters relieve the acute symptoms; and local applications, with, above all things, rest, suffice for the subacute form. For the iliac phlegmon, M. Rayer employs with great advantage, first, a general bleeding and purgatives, and then a large flying blister. If fever persists, he repeats the bleeding, and covers the whole hypogastric region successively with blisters.\*

36. *Phlegmasia Dolens—Puerperal Mania*.—These puerperal affections are treated of in Dr. McClintock and Hardy's admirable volume; but as they are not characterised by any additions to our previous knowledge, we are compelled to pass them over, simply stating that, like all other subjects comprised in their observations, these are worthy of attentive perusal.

#### § IV.—Diseases of Children.

The "Medical Gazette" and the "Medical Times" have continued the publication of the valuable lectures by Drs. West and Wilshire, before alluded to. Our extracts contain some of the most interesting selections from them, but beyond these and the two subjects below, we have not observed any communication of value within the period comprised in the present Report.

37. *Monstrosity*.—Under the name of an "Astomatous Cyclops," Mr. Allan has described a rare species of *lusus naturæ*, of which the following is a description:

"Weight of child, four pounds and a quarter; length, eighteen inches and a half; umbilicus, ten inches and a half from vertex; circumference of head, from the eye, over the vertex, to the occipital protuberance, fourteen inches. The head had the usual quantity of hair, but there was only one eye, very vivid and protruding, in the centre of the face; its upper lid was natural, and furnished with eyelashes, whilst the lower was triangular, its apex pointing downwards to the base of a fleshy cylindrical excrescence, an inch and three quarters in length, and one inch and a half in circumference, strongly resembling a penis (proboscis) situated beneath the eye. A bone similar to a digital phalanx could be felt in the upper half of his body, and a probe could be passed an inch into a canal at its rounded or free extremity. A little below this, and in the ordinary situation of the mouth, the two ears were placed, their cartilages being very perfect, and the helices pointing outwards, whilst their anterior aspects or tragi were separated from each other by a small eminence in the median line, a quarter of an inch in breadth. The meatus auditorii communicated transversely with each other, as well as with the pharynx, by apertures of the tenth of an inch in diameter. There was not the slightest trace of a mouth, of jaw-bones, or of tongue. The pharynx terminated upwards at the base of the skull, and the vocal organs were

\* L'Union Médicale, No. 151; Gaz. Méd., 8 Fev. 1848; Brit. and For. Med.-Chir. Rev., No. 2.



perfect. The lungs had never been inflated, and the large intestine was filled with meconium. The parietal bones were separated two inches and a half at the sagittal suture, and the cavity of the cranium contained sixteen ounces of clear serum (coagulable by heat and nitric acid); meninges were vascular. There was no frontal bone, but its place was occupied by a second occipital (?), on the foramen magnum of which the eye was placed, the analogous foramen in the other occipital bone giving passage to the spinal marrow. The cerebrum was of the size of a pullet's egg, and the cerebellum was also very small. There was no trace of the first four pairs of cerebral nerves. A long tortuous pair of nerves, supposed to be the non-ganglionic portion of the fifth (?), came from the crus cerebelli, ran forward, and passed out by foramina, a quarter of an inch apart in the basilar process of the *anterior* occipital bone. A slender nerve, occupying the situation of the sixth, came from the spinal marrow, and passed out by a foramen in the petrous portion of the right temporal bone; there was no corresponding nerve or foramen on the left side. The seventh and eighth pairs were very distinctly seen in their usual position. The transverse semicircular canals were visible through the substance of the petrous portion of the temporal bones.\*

38. *Infantile Menstruation*.—An instance of this anomaly has been recently reported. The child was three years of age, and had menstruated repeatedly for twelve months.

The mammæ were as healthily developed as in an adult of twenty years; the nates were also developed, the pubes having a slight flush of hair upon them; the labiæ, &c., as in a matured young person; the hymen was perfect, and the vagina anteriorly was of large size. The countenance was antique, and, altogether, this babe of three years had the appearance and gait of a little old woman. She menstruated regularly, and suffered all the concomitant uterine, lumbar, and other divers aches and pains, as is usual in those who perform this function, as evidencing a capability of utero-gestation.†

\* Lancet.

† Ibid., Jan. 29, 1848.

## REPORT ON THE PROGRESS OF FORENSIC MEDICINE.

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### § I.—*Toxicology.*

#### MINERAL ACIDS.

1. *Poisoning by Sulphuric Acid.*—Mr. Corfe,\* of the Middlesex Hospital, reports a case where the quantity taken was about half a pint. It appears that the patient was taken to the hospital at a quarter-past five on the evening of the 5th of January, having swallowed the acid about two o'clock on the same afternoon. Previously to his admission he had taken several doses of magnesia, and had swallowed large quantities of water; upon swallowing the poison, he rejected a considerable portion of it, and suffered intense agony. When seen by Mr. Corfe, he appeared to be half strangled; the extremities were cold and mottled, and the pulse small and feeble. The epithelium on the tongue and lips was partially removed, while that on the fauces was more extensively detached. He was placed in a warm-bath, leeches were applied to the throat; he was allowed to swallow pieces of lake ice; an oily enema was administered; some bicarbonate of magnesia was prescribed, and repeated doses of calomel. After a time he became tranquil, but died at 10 A.M., seventeen hours after his admission, and twenty hours after swallowing the poison.

On examining the body, the epithelium was found quite detached or corrugated from the base of the tongue to the cardiac extremity of the stomach. In the interior of the stomach, and for six inches below the pylorus, all the tissues presented the appearance of being covered with a layer of black pitch, an appearance due to the charred state of the tissues, and not to altered blood. A white spot caused by the action of the acid, was found in the centre of the duodenum, where the peritoneum was almost perforated. The valvulae conniventes presented also the curious appearance of being studded with numerous bubbles of air. The ileum was also corroded. The blood in the left auricle of the heart was black and clotted, but the left ventricle was empty, and rigidly contracted.

A second suicidal case of poisoning by sulphuric acid, has been recorded by Dr. Chowne.† A widow, aged 50, who had been in the habit of drinking, and who had become much depressed in spirits, procured some sulphuric acid at a druggist's shop, and immediately took about half an ounce. The moment it reached her throat, she seemed to be strangled, and fell. She was taken to Charing Cross Hospital in about an hour and a quarter after swallowing the acid, having taken nothing in the interval, but having vomited several times. In the hospital, alkaline remedies were repeatedly administered, and she drank freely whatever was given to her. She complained at first of burning pain in the region of the stomach, but after an hour or two the pain left her entirely, and she even bore pressure over that organ without the expression of any suffering. Her most distressing symptoms, however, were extreme irritation in the throat, a feeling of suffocation, and a constant desire to cough, in order to remove the tenacious phlegm from the fauces. She also vomited small quantities of a reddish fluid. The pulse was small and intermitting, and the mouth presented

\* Medical Times, Jan. 15, 1848.

† Lancet, July 10, 1847.

an appearance of having been smeared with milk. The epiglottis was much enlarged, but the voice was almost natural. The patient gradually sank and died, with symptoms of extreme depression, about forty hours after taking the acid. Just before her death she was comparatively tranquil, both in mind and body.

*Post-mortem appearances.*—There were no signs of the acid having come into contact with the external surface of the body, and the mucous membrane of the cheeks, gums, and tongue was not destroyed, but on the velum it had been removed. The epiglottis was covered by a thick layer of false membrane; it was also very much inflamed, but the rima glottidis appeared quite natural. There were two small corroded patches in the trachea, about one inch from its commencement. The lining membrane of the œsophagus was of a dirty ash colour, and could be easily stripped off; its muscular tissue was highly inflamed, and pus was found between the muscular and mucous membranes. The cardiac orifice of the stomach did not show any marks of the action of the acid, but the large curvature at its cardiac extremity had several strong ridge-like elevations, at small distances from each other, obviously thickened by the acid, the mucous membrane covering them being destroyed. Between the ridges the mucous membrane was natural. These ridges were formed in lines about the fifth of an inch broad, and upon examining their surfaces, they were found to be covered with what appeared to be a false membrane, which could be removed only at their margins, being elsewhere incorporated with the corroded mucous tissue. At the pyloric extremity of the stomach the action of the acid was less intense, but there was a large raised patch, about the size of a crown-piece, contracting the stomach in this part not less than the third of an inch. Extravasation of blood had also taken place beneath the mucous membrane, so as to give to the elevation a black mulberry appearance, and there was thickening of all the tissues around it. The duodenum was in parts corroded in the same manner as the cardiac end of the stomach. The cavities of the heart, with the exception of the right ventricle, were empty. This contained about half an ounce of dark coagulated blood.

With a view of determining experimentally the cause of the appearances found in the stomach, some sulphuric acid was dropped upon the mucus in different parts of the intestinal canal, where the membrane was sound, and a coagulated film was immediately produced, similar to that observed in the stomach, though thinner. Immediately after the formation of this film, it could be scraped off, but if allowed to remain more than a few seconds, the mucous membrane became corroded and involved in it. The remarkable absence of pain over the region of the stomach, even on pressure, after the lapse of two hours, notwithstanding the several local lesions, as well as the great tranquillity enjoyed before death, though not without parallel in cases of poisoning by the mineral acids and by the more active irritant poisons, are circumstances which give an interest to this case.

A third case of poisoning by sulphuric acid occurred in an infant. Hannah Thomas was delivered of a fine healthy child in the Pontypool workhouse, on the 16th of February, 1847. When she had been eight days confined she was seen in the kitchen of the workhouse with a cup in her hands, in which another pauper kept some sulphuric acid for application to a ringworm on her child's head. The same day the child of Thomas was taken ill with vomiting, and other symptoms, and it died the next day. Suspicions were not aroused until the 29th inst., when Miller, the pauper who used the acid, discovered the child's apparel to be rotten in parts, and to resemble her own child's dresses on which she had dropped some of the acid. The body was exhumed, and a post-mortem examination and analysis made by order of the coroner, and a verdict of wilful murder recorded against the mother.\*

2. *Poisoning by Nitric Acid—Recovery.*—A prostitute attempted suicide, by swallowing half an ounce of aquafortis. Three quarters of an hour elapsed before any medical assistance could be obtained, though the druggist at whose shop the poison had been bought had, in the meanwhile, attempted to administer calined magnesia. On the arrival of Mr. Tompkins, who was called to the case, she was in a state of helpless intoxication, and was vomiting a large quantity of dark fluid

\* Pharm. Times, April 10, 1847.



matter, resembling porter in colour, and mixed with viscid mucus. The face was congested, the lips were blue and swollen, with a yellow stain and two or three small blisters in the middle of the under lip. There was great depression, contracted pupils, strong spasmodic closure of the jaws, which only intermitted during the vomiting, and grinding of the teeth. As this state of things precluded the use of any antidote, hot-water bottles were applied to the feet, and she was put to bed, where she lay for several hours in a state of insensibility, interrupted only by efforts to vomit, which were readily excited by pressure on the throat. Pressure on the abdomen, at no period, caused the expression of severe pain. After reaction was established, leeches were applied to the throat and abdomen, and doses of hydrocyanic acid administered to allay the vomiting. All the symptoms gradually yielded, and in the course of two or three days the membranes of the mouth began to separate, one portion being moulded into the shape of the fauces, pharynx, and upper part of the œsophagus. From this time she gradually recovered.

It is probable that in this case, as Mr. Tomkins suggests, but little acid reached the stomach, and that, as the patient had been drinking before she took the poison, that which did reach it was so diluted with gin and beer as not to cause much inflammatory action in that organ.\*

3. *Poisoning by Hydrochloric Acid.*—A case of alleged poisoning by hydrochloric acid, fatal at the end of six weeks, is made the subject of discussion in the "*Annales d'Hygiène.*"† The acid was presumed to have been taken either pure or mixed with a varnish, for the purpose of procuring abortion. The history during life, though imperfect, affords a strong probability that in one or other form the poison was actually administered; but the chief interest of the reported case is in the chemical examination. The parties to whom the chemical examination was first entrusted obtained from a decoction of the stomach and its contents an acid liquid, which gave with nitrate of silver an unascertained quantity of white precipitate, insoluble in water, and in nitric acid, even with the aid of heat, but soluble in ammonia. The examiners, therefore, concluded that the stomach and its contents contained hydrochloric acid, to which they attributed the death of the deceased. This opinion having been very properly called in question, experiments were made by order of the authorities to ascertain whether the stomach and its contents, as well as the intestines, do not commonly yield the same results. On following the process adopted by the parties first employed, precisely the same results, viz., a marked acid reaction of the filtered liquid, and a considerable quantity of chloride of silver were obtained, both from the stomach and intestines. With the liver no alkaline reaction was obtained, but a considerable proportion of the chloride. The experiments were made on the viscera of two young females who had died of phthisis.

4. *Poisoning by Oxalic Acid.*—A case of poisoning by oxalic acid, terminating favourably, is reported by Dr. Charles Barham of Truro, in the "*Dublin Medical Press,*" Oct. 13, 1847. The dose was *one ounce*; the first appearance of the symptoms in *ten minutes*, in the shape of vomiting of fluid of a dark bloody colour; convalescent on the eleventh day. On the ninth day an eruption appeared over the body, similar to the maculæ of typhus, but passed off by the eleventh day. The other symptoms do not challenge observation.

#### MINERAL POISONS.

##### *Arsenic.*

5. *Case of the Duke of Praslin.*—The particulars of the Praslin tragedy are still fresh in the recollection of our readers. Some points connected with the death of the duke have given rise to much discussion; and as the case, in all its aspects, is one of considerable interest, the following condensed account is compiled from the official documents.‡ On the morning of the 18th of August 1847, the Duchess of Praslin was found dead in her bedroom; the body presented upwards of thirty incised, punctured, and contused wounds. The furniture of the apartment bore

\* *Lancet*, May 8, 1847.

† Jan. 1848, p. 179.

‡ *Annales d'Hygiène et de Médecine Légale*, Oct. 18, 1847; p. 367. See also *Brit. and For. Med.-Chir. Rev.*, Jan. 1848.

evidence to a desperate and long-continued struggle; and the bruises, abrasions, scratches, and several slight injuries on the person of the Duke of Praslin, proved that he had borne a part in those struggles. The point of a poignard, the handle and blade of the same instrument, and the butt-end of a pistol stained with blood, were found to correspond sufficiently with the injuries on the body of the duchess. All the circumstances of the case taken together, leave no room for doubt that the duchess had fallen by the hand of her husband.

*Suicide of the murderer.* About ten o'clock, on the evening of the 18th, the Duke of Praslin began to vomit. This was the first well-ascertained symptom of poisoning; for it is believed that the frequent retirement of the duke was with a view of baffling the close surveillance of the police. Be this as it may, he was first observed to retire to the water-closet between five and six o'clock in the evening. The vomitings were accompanied by an extremely feeble pulse, and great debility; after taking a glass of Bordeaux wine and some ice, the vomiting ceased, and he appeared much calmer. During the night, and early in the morning of the 19th, the vomitings returned; and the duke being placed in a bath, fainted; the fainting recurred on leaving it, and soon after he had an involuntary evacuation. At three o'clock in the afternoon of the 20th, the duke being in bed, stated, in answer to a question, that he was better. He spoke distinctly, his mind was clear, he did not complain of any pain in the abdomen on pressure, he breathed freely, the tongue was clean, but the pulse was extremely small and irregular, and the extremities icy cold. These symptoms led M. Andral, who had been called in, to suspect the possibility of poisoning, though he thought the strong mental emotions which the duke had suffered sufficient to produce them. By way of precaution, he desired that the evacuations should be henceforth preserved. At eleven o'clock of the evening of the same day the duke was somewhat stronger; had not passed any more evacuations; the pulse had become regular and stronger, but continued more frequent than usual; the hands were still cold. At four o'clock of the morning of the 21st the duke was removed from his residence to the prison of the Luxembourg. He suffered merely from coldness of the extremities, and considerable thirst. An hour after his arrival he was found with a calm expression of countenance, with a little more colour than natural; a somewhat vacant look; the temperature of the body, with the exception of the hands, restored; the sufferings relieved; pulse tolerably full and from 80 to 85 in a minute; tongue clean; thirst excessive; stomach free from pain; no vomiting or nausea. In the evening the pulse was small, frequent, and like a thread, and the extremities cold; there was a sensation of extreme tightness in the throat and of great oppression, and the abdomen was tympanitic and slightly painful; no evacuations of any kind since the arrival at the Luxembourg. On the 22d all the symptoms were more intense. There was extreme spasmodic constriction of the throat, very painful deglutition, and ardent thirst; the tongue and mucous membrane of the mouth and pharynx of a deep red; a sensation of burning from the mouth to the anus; the abdomen inflated and painful to the touch; a high state of fever; a frequent and irregular pulse, now strong, now weak; extreme oppression; no nausea, no vomiting; bowels twice relieved by injections; urine passed in small quantity, though diuretics had been employed. The duke passed a restless and sleepless night, and was evidently growing weaker. On the 23d, the symptoms were aggravated: the features had undergone a great change; the complexion had assumed a reddish-brown cast; the intellect remained entire; there was constant thirst; extreme constriction of the throat; very painful deglutition; the tongue red and dry; the abdomen greatly inflated and painful; the respiration much oppressed; the pulse small and frequent; the extremities very cold; no evacuation of the bowels; no urine passed. At seven o'clock, on the morning of the 24th, the sight had become dim, the respiration very difficult, the pulse very weak and frequent, but the mind still intact. At one o'clock the respiration was more embarrassed, the extremities icy cold, the pulse very frequent and scarcely perceptible. The duke was evidently sinking, and died at thirty-five minutes after four o'clock, having preserved his senses to the last.

The post-mortem examination discovered nothing worthy of remark in any other part of the body, except the alimentary canal, unless the effusion of blood in spots under the pleura, and under the lining membrane of the left ventricle of

the heart, be considered as due to the action of the poison. The following were the appearances discovered in the alimentary canal:—

In the stomach, from the cardia to the pylorus, there were seven large eschars, from three-fourths of an inch to an inch and a half in diameter, scattered over the length of the great curvature. These eschars were black, and completely circumscribed by a hard and thickened border of a faint yellow colour. Round these eschars, for a short distance, the mucous membrane was somewhat softened and of a deep red colour. The eschars did not extend through the whole thickness of the walls of the stomach, and there was neither ulceration nor perforation. The rest of the mucous membrane was perfectly healthy. The duodenum and the lower portion of the ileum were of a uniform dull red colour, but free from eschars and ulcers. The rest of the intestines, small and large, were perfectly healthy.

The chemical analysis was entrusted to MM. Orfila and Tardieu, who, by means of Marsh's apparatus, detected arsenic in the liver, and in the stomach and its contents; they failed, however, in obtaining it in a small quantity of urine voided shortly before the death of the duke.

The case of the Duke of Praslin gave rise, at the time of its occurrence, to much discussion. Some blame was attached to the medical attendants for not having sooner attributed the symptoms under which the duke laboured to poison; suggestions were thrown out as to its being a case of mixed poisoning by arsenic and laudanum; the unequal march of the symptoms gave rise to a suspicion that he had contrived to repeat the dose; and some were inclined to doubt the administration of arsenic, on account of the length of time that the duke survived. Most of these points are discussed in the report of MM. Orfila and Tardieu, and the objections satisfactorily disposed of. They arrive at the following conclusions:

1st. That M. de Praslin died poisoned by a preparation of arsenic.

2d. That the poison was very probably swallowed late on Wednesday, August 18th, after four o'clock in the afternoon, and before ten o'clock at night.

3d. That the march of the symptoms was regular, and such as we observe in cases of poisoning by arsenious acid.

4th. That the cessation of the vomiting ought not to be attributed to an improvement, even momentary, in the state of the patient, since he continued to be a prey to severe symptoms of arsenical poisoning.

5th. That the death, though slow in its occurrence, might be the actual effect of a quantity of arsenious acid swallowed six days previously.

The quantity of the poison, though not ascertained, must have been considerable; and, taking all the circumstances of the case into the account, it seems in the highest degree probable that the poison was swallowed between the hours of nine and ten on the evening of Wednesday, August 18; so that the duke survived its effects no less than five days and eighteen or nineteen hours—a considerable, though by no means a very unusual, period; for several cases are on record, in which the fatal event did not happen till the lapse of three, four, five, six, or seven days. Out of forty-eight cases, collected and analyzed by the writer, one terminated on the sixth, and one on the seventh day.

It may be well to add to the foregoing account of the case that arsenic was found on the person of the duke, in the pocket of a dressing-gown, which the police had at first neglected to search.

6. Several other cases of poisoning by arsenious acid are recorded in the French Journals. The following are given as possessing some points of interest:—1. A family of four persons were seized, after partaking together of some broth, with acute pain, vomiting, and other symptoms of poisoning. They all recovered, though the dose was proved to have been very considerable. The causes assigned for the favourable termination were, that the arsenic was administered in fragments, or coarse powder, and that it was enveloped by the greasy matter of the broth. Arsenic was found in large quantity in the matters discharged from the stomach and bowels.\* 2. In the case of two unsuccessful attempts at poisoning by arsenic, the fact was established by giving portions of the prepared food to two animals; and suspicions having been excited respecting the death of an old man of 80, who

\* *Gazette Médicale*, 4 Septembre, 1847.



died eighteen months previously, were verified by the exhumation of the body. Although putrefaction was very far advanced, and the viscera formed one mass of adipocere, they were found to contain an enormous quantity of arsenic.\* 3. A husband was poisoned by his wife, with arsenic furnished by her paramour. The quantity given to the wife was about an ounce, of which she administered a part in white cheese mixed with milk. The husband survived ten hours. MM. Chevallier and Bayard detected arsenic in appreciable and even ponderable quantities in the stomach, intestines, liver, spleen, heart, and lungs; and in the matter voided from the stomach and bowels. A large number of suspected substances were examined, none of which were found to consist of, or to contain arsenic; but certain substances found in the possession of the accused paramour, his uncle, and godfather, were found to be arsenic. The paramour was condemned and executed, and the wife and a female accomplice were condemned to perpetual imprisonment with hard labour.†

7. *Poisoning by Arsenic—Magnesia as an Antidote.*—M. Cadet-Gassicourt has related two cases of arsenical poisoning, in which hydrated magnesia was successfully administered. Both cases occurred in the practice of M. Chammartin.‡

The subject of the first case was a lady in Paris, who, on the 27th of October, 1847, took a considerable dose of arsenic in the form of powder sprinkled on bread and butter. Three or four hours after this she took a cup of coffee; this brought on immediate vomiting, which recurred at intervals. Between six and seven o'clock the same evening M. Chammartin was called in, and found the patient suffering from all the symptoms of arsenical poisoning. He prescribed hydrated oxide of magnesia, of which 300 grammes (between  $\text{℥}ix$  and  $\text{℥}x$ ), were given in the course of two hours. It was followed by liquid evacuations, and the patient recovered.

The subject of the second case was a man *æt.* 23, of dissipated habits. Three hours after an unusually full supper he took a large dose of powdered arsenic, followed by copious draughts of water. He passed the night in great agony in the bowels and chest, but had no nausea, vomiting, or diarrhœa. At 11 A. M. the next day, M. Chammartin was sent for, and found the man in a state of great collapse, with his face pale, and his features haggard and pinched; he was agitated, and spoke with a feeble voice; his respiration was difficult, and he complained of a tearing sensation along the gullet and at the epigastrium, and of thirst and dryness of the fauces. His tongue was moist, but red at the edges and point, his deglutition was easy, and there was no diarrhœa, though he suffered from colic and cramps in all his limbs. The hydrated oxide of magnesia was then given, warmth was applied to the surface, and he was afterwards bled. He was then removed to the Hôtel Dieu, where all his symptoms improved. He finally recovered. The quantity of magnesia given was about 500 grammes (about  $\text{℥}xvij$ ), but while in the Hôtel Dieu some hydrated sesquioxide of iron was administered.

The same journals contain an account of the dispute between MM. Caventon and Bussy, as to the comparative efficacy of the hydrated magnesia, and the hydrated sesquioxide of iron as antidotes to arsenic. The former advocates the superiority of the sesquioxide over the magnesia, while M. Bussy is inclined to the opposite opinion. M. Caventon says that the salt formed by the iron with arsenic is less likely to be decomposed by the muriate of ammonia which naturally exists in the stomach and intestines, and states that this salt readily decomposes the arsenite of magnesia, so that when the last is the antidote used, the arsenic is more liable to be reduced to a soluble state. But M. Bussy remarks that such a result is obviated by using an excess of magnesia, which again, according to M. Caventon, is apt to occasion an extrication of free ammonia, which, from its irritating properties, cannot but concur in complicating the case.

The same subject has also been investigated by M. Riègel, whose results are briefly these:§—The author has been enabled to detect traces of arsenic in a filtered solution, upon the application of the sesquioxide of iron, by the sulphuretted hy-

\* Gazette Médicale, 4 Septembre, 1847.

† Annales d'Hygiène, Avril, 1848, p. 419.

‡ Journal de Chimie Médicale, Février et Mars, 1848.

§ Jahrbuch für Prakt. Pharm. xiii., and Chemical Gazette, August 1, 1847.

drogen test, wherever the quantity of the oxide was less than seven parts, but the liquid was perfectly free from all traces of the poison wherever the antidote was added in the proportion of more than 10 parts. With arsenic acid at least 12 parts were required to precipitate the acid completely. With respect to the hydrate of magnesia, he found that to precipitate entirely one part of arsenious acid, at least 18 parts of the antidote are required, and he recommends that, in preparing the magnesia, 100 parts of the sulphate should be precipitated by 50 parts of caustic potash, and the precipitate washed and preserved in bottles under water. Moreover, the author found that the compound formed by magnesia with arsenious acid was quite insoluble in cold and boiling water. When the arsenic is in combination with alkalies, this antidote does not completely remove it from its solution, but by mixing some undecomposed magnesian salt with the hydrate of magnesia, all traces of the poison were removed. He accordingly recommends a mixture of hydrate of magnesia and sulphate in water, in equal parts, as the most advantageous form, especially when it is uncertain whether the poisoning has resulted from free arsenious acid, or some alkaline arsenite.

In preparing the magnesia for the purposes of an antidote, it is necessary according to M. Bussy, to avoid calcining too much, as highly calcined magnesia is useless.\*

8. *Poisoning by Arsenic.—Detection of the Poison.*—On the trial of Elizabeth Johnson, for the murder of her husband, at the Liverpool Lent Assizes for 1847,† a verdict of not guilty was returned in the face of the strongest circumstantial evidence. The objection that the arsenic detected in the exhumed body might have been derived from the soil, which had not been analysed, having been much insisted on by the presiding judge, Baron Alderson, who expressed himself as follows:—"But the quantity of arsenic which Mr. Watson found was but very small, not more than a grain, if so much, in the nineteen ounces of intestines; and as the grave was wet, may there not be a possibility of the small quantity of arsenic being derived from water which had drained into the body out of the soil of the churchyard?" This case, and the value of the objection here stated, will be found very ably discussed in Mr. Taylor's new work on Poisons,‡ p. 366. It is evident, from the importance attached to this objection in the present instance, that the chemical examination of the surrounding soil will be necessary in all cases in which the coffin is so far decayed or injured as to allow of the contact of the soil with the body, or of the percolation of the rain through it. Though the fact that arsenic, where it exists in the soil, is in an insoluble form, and its proved non-absorption by the body, in more than one instance where it was actually contained in the soil, might appear to render such a precaution unnecessary, it is certainly expedient to examine the soil, in order to ascertain whether it contains arsenic, and if so, in what form. The other points of interest in the case will be found fully discussed in the work referred to, which we may take this opportunity of recommending as the most recent work on the subject in our language, and one worthy to take its place beside the older standard work of Dr. Christison.

9. *Poisoning by Arsenic.—Detection of Arsenic in the Bones of the Skeleton after ten years.*—A case of poisoning occurred in the village of Scamague, without the fact having reached the ears of justice. Ten years afterwards, circumstances arose which led to the apprehension of four suspected persons. One of them confessed that the murdered individual had died in twenty-four hours from the effects of arsenic. The skeleton was exhumed and submitted to chemical analysis, and arsenic was distinctly discovered, while none was detected in another skeleton that lay so close to the other that at first it was mistaken for it.§

10. *Arsenic detected in the Urine and in the Serum of a blistered surface.*—M. Legroux, physician to the Hospital Beaujon, in a case of poisoning by arsenic, where the matters discharged from the stomach and bowels had been thrown away, succeeded in obtaining evidence of poisoning in the urine and serum of a blistered surface. M. Chatin, to whom the analysis was entrusted, obtained from about 1,300

\* Bouchardat, in *Nouvelle Encyclographie des Sciences Méd.*, Février 1847.

† *Med. Gazette*, Sept. 1847, p. 555.

‡ "On Poisons in relation to Medical Jurisprudence and Medicine," by Alfred S. Taylor, F. R. S., Lecturer on Medical Jurisprudence and Chemistry at Guy's Hospital.

§ *Gaz. Méd.*, Janvier 1847.

grains of urine an arsenical ring, and spots enough to cover two porcelain plates; and from about 620 grains of serum 16 well marked spots of arsenic, and several smaller stains. M. Chatin, consequently, suggests the application of a blister in cases of suspected poisoning, where the secretion of urine is suspended, and the matters discharged from the alimentary canal have been lost,\* a suggestion which is certainly deserving of attention.

11. *Test for Arsenic—A New Mode of distinguishing the Spots of Arsenic and Antimony.*—Both the methods recently recommended by MM. Lassaigne and Cottureau (Ranking's "Abstract," Vol. V.), being tedious and open to objections, the writer of the present abstract proposes the following as expeditious and easy of application.† Having obtained a crust of metal on porcelain, treat it with a drop of hydrosulphuret of ammonia. The antimonial crust is rapidly dissolved, the thin portions of the crust at the circumference instantaneously, while the centre speedily contracts, and in less than a minute disappears. The arsenical stain is at first scarcely affected at all, but after a considerable interval of time, varying with the thickness of the crust, is acted upon, but imperfectly. On the evaporation of the excess of hydrosulphuret of ammonia, the antimonial spot assumes the form of a distinct orange-red sulphuret of antimony without any trace of the metal; while the arsenical stain, unless the test be repeatedly applied, always presents a centre of metal, with a border of pale lemon-yellow sesquisulphuret. If treated with a drop of liquor ammoniæ, this latter stain disappears, while the antimony remains intact; and, on the other hand, on touching the spots with hydrochloric acid, the antimony disappears and the arsenic remains.

The hydrosulphuret of ammonia employed in this case, should contain an excess of sulphur. Freshly-prepared hydrosulphuret acts less characteristically than that which has been some time in use; unless the liquid have a distinct yellow colour, it is always desirable to add to it a few grains of sulphur. We must, however, avoid such an excess of sulphur as shall impart to the test an orange colour. When so prepared, the largest and thickest stains of antimony will be found to disappear in from three to seven seconds, while even the faintest arsenical crusts remain for a very considerable period intact, and are never completely dissolved by a single application of the test. Another precaution which should be observed is that of proportioning the quantity of the test to the size and thickness of the spot. A single drop is sufficient, but that should be applied by a large or small-sized glass rod, according to the size of the spot itself. This test, when applied with the precautions here pointed out, is perfectly conclusive; but it would be well to corroborate it by Bischoff's test—the chloride of lime—which dissolves the arsenical spot, but leaves the antimonial spot intact; and still further by the nitro-muriatic-acid test, to which Mr. Alfred Taylor gives the preference. This test may be applied as follows: add to the metallic stain a drop or two of nitro-muriatic acid (two parts of muriatic to one of nitric acid), and evaporate to dryness. The brownish white residue is soluble in water if the stain was arsenical, insoluble if antimonial; and the arsenical stain gives a brick red precipitate with nitrate of silver; not so the antimonial stain.

The three tests now recommended appear to be preferable for promptitude and certainty to any others; and should a series of metallic stains yield characteristic reactions with each of them, the evidence of the presence of arsenic or antimony, will be as satisfactorily established as it is possible to expect or desire.

12. Much has been lately written on the means of imparting to the cheap, colourless, and almost tasteless oxide of arsenic properties, which, in actual use, may suffice to warn the intended victim of poison of its presence. Dr. Cattell, of Braunston,‡ proposes the following admixtures:—1. Arsenious acid, ℥j; prussiate of potash, ℥xx.; sulphate of iron, ℥x. The arsenious acid and the prussiate of potash to be mixed together before adding the iron. The substances to be dry, and the mixture to be preserved in a stoppered bottle. 2. Substitute for the sulphate of iron, the same quantity of sulphate of copper. 3. Arsenious acid, ℥j; bichromate of potash, ℥ij or ℥iv. 4. Arsenious acid, ℥j; sulphate of zinc, ℥ij. 5. Arsenious acid, ℥j; tartarized antimony, ℥ij. 6. Arsenious acid, ℥j; pulverized

\* *Journal de Chimie Médicale et de Toxicologie*, Juin 1847.

† *Pharmaceutical Times*, July 10, 1847.

‡ *Lancet*, Oct. 9, 1847.



naphthaline,  $\frac{3}{4}$ ss. The first three combinations effect the object in view by changes of colour, which, for the principal articles of diet, will be found minutely detailed in Dr. Cattell's paper. The fourth and fifth combinations act as emetics; the last excites coughing.

13. *Poisoning by Arsenite of Copper*.—Mr. Hetley, visiting surgeon to the St. Marylebone Infirmary, was sent for to see several persons who had been taken suddenly and dangerously ill. He found three adults and eight children vomiting and retching, the angles of their mouths and their linen being coloured green by the vomited matter. One of the children stated, that he had bought two pennyworth of coloured confectionery ornaments, of which they had all partaken. The symptoms appeared within ten minutes. As the patients had already vomited freely, the treatment was confined to the administration of a mixture of new milk, eggs and sugar, under which they recovered without any bad symptoms.\*

An accident on a larger scale, but happily unattended by any fatal result, occurred in our own experience, one of the patients having been brought to the King's College Hospital on the day after the accident. An ornamental green basket, after having been used at an evening party, was given to one of the attendants, who distributed the fragments among the inmates of a large workshop. Severe vomiting and purging was the result. On inquiry at several confectioners we ascertained that arsenite of copper is commonly used to give a green colour to confectionery, and an analysis of a fragment of the basket confirmed this statement. This poison will continue to be used till some grave accident occurs.†

#### MERCURY.

14. *Case of Poisoning by Turbith Mineral (Subsulphate of the Peroxide)*.—The following case, which occurred in the practice of Dr. Letheby, was communicated to the Pathological Society of London by Mr. Ward.‡

G. L., aged 16, on the night of the 19th of February, took two pennyworth (about one drachm) of this substance, which caused a burning sensation in the throat and mouth, followed by vomiting. The pain in the throat increased, and soon extended to the chest and abdomen. He applied at the London Hospital for relief, and upon admission, vomited repeatedly; his countenance was pale and anxious, and he complained of chilliness and pain in the throat and stomach. Sulphate of zinc and mucilaginous draughts were administered, but the symptoms continued, and he passed a restless night, with purging, vomiting, and cramps in the legs. All the inflammatory symptoms, particularly those referred to the stomach, continued during the next day.

On the 21st the purging ceased, but the throat was still painful, and the breath began to acquire the mercurial fetor. He now daily became weaker and weaker, with continued vomiting and profuse salivation, the gums acquiring a deep bluish tint, and beginning to ulcerate at the margins. He never lost his senses or became comatose, but died nearly a week after the administration of the poison. The following were the most striking post-mortem appearances; the blue tint of the lips and gums, with the ragged ulcerated condition of the latter; swelling of the salivary glands; the alimentary canal, especially from the cæcum downwards, redder than natural, and studded with petechial spots; the intestines contracted through their whole extent, nearly empty, and of a slate or leaden colour; the bladder contracted; the lungs gorged and collapsed; the heart empty on its left, and distended on its right side, leading to the conclusion that death had commenced at the respiratory organs, which view was also corroborated by the turgid condition of the venous system generally, and the black uncoagulated state of the blood.

#### LEAD.

15. *Impregnation of Water with Lead*.—A notice of the early researches of Mr. Osborn on this subject will be found in Vol. V. of this "Abstract," p. 299, since

\* Pharmaceutical Journal, Oct. 1, 1847, p. 199.

† This anticipation has been verified as this sheet was passing through the press.

‡ Medical Gazette, March 12, 1847.

which time he has been induced to follow up those investigations, and has ascertained, by careful chemical examination of the water of a well at Portswood, that the lead piping is corroded and acted upon by free hydrochloric acid contained in the water. In all probability, the same cause would be found in operation in other parts of England, as well as in the localities specified by Mr. Osborn.\*

## COPPER.

16. Victoire A., an idiot, died after an illness of 14 days, with symptoms and under circumstances which excited, after the interment, suspicions of poisoning. The body was disinterred, and the principal organs, as well as the contents of the intestines, were placed in the hands of Chevallier and Lassaigne. They also examined four specimens of earth taken from near the coffin. The conclusions at which they arrived were as follows: 1st. That the organs extracted from the body of the girl Victoire A. contained a preparation of copper. 2d. That that preparation of copper must have been swallowed; because the presence of copper had been detected in the intestines, their faecal contents, the stomach, the liver, the heart, the lungs, the kidneys, and the muscles. 3d. That the earth surrounding the coffin containing the body of the girl did not contain any copper. 4th. That the copper found in the organs of the girl Victoire A., by reason of the proportion in which it was obtained, could not be considered as *accidental copper*; for it is known that we discover only traces of the metal in the animal economy, and that in some instances it has been found to be absent.†

17. *Impregnation of Water with Copper.*—Mr. Osborn, of Southampton, has recorded a case in the "Pharmaceutical Times,"‡ in which the impregnation of water with copper was clearly due to the use of a brass force-pump. He found the water to become so quickly charged with the metal, that he was led to suppose the existence of some acid which might render the copper more easily soluble. He thinks that this acid may be supplied by the grease used for the piston, or that the oxide of copper, like that of lead, may be dissolved by acids naturally contained in the water.

18. *Normal Lead and Copper.*—M. Legrip, in the course of an inquiry into a case of suspected poisoning which gave negative results, was induced to test the liver and spleen by carbonization and nitric acid, when he obtained 0.0027 gramme (about 0.00017 grain, English) of lead, and 0.0045 gramme (about 0.0003 grain, English) of copper, which he is inclined to regard as the normal proportion contained in those viscera. The quantity is so small, that, whether it is to be accounted for by some impurity in the test employed, or to be considered as a normal constituent of the human body, it is not likely to lead to any practical difficulty in medico-legal inquiries.§

M. Orfila also inclines to the belief, that both these metals are normal constituents of the human body, and that they can be easily detected by carbonization of the liver, spleen, and other organs. If a salt of lead or copper has been taken as a poison, and absorbed into the tissues, he considers that the mere digestion of the viscera in boiling water will suffice to separate the soluble compound of the metal produced. The question will be found fully discussed in a paper communicated to the Académie de Médecine.||

[See also, on this subject, the "Abstract," Vol. II. p. 327, for the results of the experiments of Devergie and Boutigny; and Vol. V, p. 299, for the negative result obtained by Mr. Alfred Taylor in the case of lead.]

## ANTIMONY.

19. *Poisoning by the Chloride of Antimony.*¶—W. H., aged 41, a potboy, of intemperate habits, swallowed an ounce of this substance. He immediately experienced severe pain in the throat and fauces, and soon became insensible. The

\* Pharmaceutical Journal, May 1, 1847. † Annales d'Hygiène, Avril 1848, p. 408.

‡ Oct. 16, 1847.

§ Journal de Chimie Médicale et de Toxicologie, Mai 1847. || Gaz. Méd. Juin 1847.

¶ Dublin Medical Press, March 8, 1848; and Lancet.

stomach-pump was then applied, and the patient was afterwards taken to an hospital, at 4 P. M., April 23d, 1847. Upon his admission, the surface of the body was cold and clammy, the eyes lustreless, and the pupils inactive; the pulse scarcely perceptible, and the expansion of the chest, during inspiration, so slight that respiration seemed suspended. Stimulants were applied to the nostrils, and cold affusion to the head, by which he was so far roused as to be able to swallow tincture of bark, diluted with green tea, which was repeated at short intervals for an hour, during which period he vomited some undigested food three or four times. Though all his symptoms, after this, soon improved, yet he was so prostrated for several hours that he could not articulate. The next day he began to complain of a sense of burning, and severe pain in the throat and abdomen, with some degree of tenderness. The tongue was dry in the centre, and the fauces considerably inflamed. He was ordered fomentations, farinaceous food, castor oil, calomel, and opium. He then became restless, with a hard pulse, and the abdominal tenderness increased, until the oil operated, when all the symptoms were relieved. He rapidly recovered, and soon left the hospital. • This is the second case in which butter of antimony has been made use of for the purpose of suicide. In two instances it has been taken by mistake; in the one for ginger beer, and in the other for antimonial wine.

#### ZINC.

20. M. Reboulleau, a French physician, describes some peculiar effects which he has observed to be produced on the health of workmen in a brass foundry in the neighbourhood of Paris. They bear a close resemblance to an attack of intermittent fever, beginning with dull pains in the hypochondria, back, and limbs, oppressed respiration, and loss of appetite, followed by cold shiverings, pallor of countenance, contraction of the features, chattering of the teeth, small, frequent, and irregular pulse, accompanied sometimes by nausea and vomiting. This first stage is followed by redness of the face, general heat of surface, full pulse, and warm and moist skin; and this stage, again, by profuse perspiration, which lasts from eight to ten hours. M. Reboulleau himself has suffered from all these symptoms. It appears that some workmen escape the attack altogether; others are rendered proof against it by passing through three or four paroxysms, produced by as many distinct exposures to the cause. The author attributes the effect chiefly to the oxide of zinc, but thinks, at the same time, that copper and arsenic are not altogether innocent of it. The proper prophylactic is, of course, efficient ventilation, or an arrangement by which the metallic fumes may be readily carried off as soon as disengaged.\*

#### OPIUM, AND ITS PREPARATIONS.

21. *Poisoning by Godfrey's Cordial—Recovery under the use of the Electro-magnetic Battery.*—Mr. W. J. Tubbs, of Upwell Isle, relates a case of poisoning by half a teaspoonful of Godfrey's cordial, given to an infant three weeks old. The symptoms of poisoning were well marked; and recovery took place under gentle shocks passed along the spine and through the region of the heart during ten minutes, after cold affusion, flagellation, ammonia to the nostrils, the injection of cold water into the ears, the application of mustard poultices, and an emetic of five grains of sulphate of zinc, had failed †

22. *Poisoning by Acetate of Morphia treated by large Doses of Coffee.*—A man swallowed, at one time, about seven décigrammes (about  $13\frac{1}{2}$  grains) of acetate of morphia. As the exhibition of twenty centigrammes (four grains) of tartar emetic failed to excite vomiting, the medical attendant, about three hours after the taking of the poison, administered, during a state of profound coma, a very concentrated infusion of coffee, with the dregs. In twelve hours the patient must have taken upwards of ten ounces of coffee. He afterwards recovered.‡

\* Académie des Sciences, Gaz. Medicale, 3me série, tome ii. p. 790.

† Medical Gazette, Sept. 1847, p. 513.

‡ Journal de Pharmacie et de Chimie, Fev. 1847.



23. *Method of determining the presence of Morphia in Cases of Poisoning.*—M. Mermu\* recommends the suspected matter, if solid, to be carefully washed with distilled water acidulated with acetic acid; if fluid, to be diluted with the same. The solution having been warmed, filtered, and evaporated to dryness, the animal matter is to be separated by treating the residue with boiling alcohol. To the alcoholic solution, previously filtered, tincture of nutgalls is to be added, and maceration being continued for fifteen days, the morphia remains in solution in combination with tannin. The solution, again filtered, is then to be diluted with distilled water, and a solution of gelatine is to be added in excess, to decompose the tannate of morphia. Filtration separates the tannin and the gelatine, and the alcohol being dissipated by evaporation, the morphia remains, and may be recognized by the usual reagents.

#### HYDROCYANIC ACID.

24. *Suicide by Hydrocyanic Acid—Acts of Volition and Consciousness.*—The following case is peculiarly interesting, inasmuch as both the *strength* and *dose* of the poison were known.†

Mr. Shepherd, a surgeon of Worcester, was in the habit of entering the shop of Mr. Stringer, a chemist, for the purpose of prescribing. Upon the present occasion (June 8th) he came to the shop with his sister, Mrs. Hill, and asked for 3ij of Scheele's prussic acid, which was handed to him in a bottle properly labelled. He shortly afterwards left the shop, but returned again with Mrs. Hill in the course of a few minutes, and after paying for some carbonate of soda, requested to speak with Mr. Stringer in the back parlour. Mr. Stringer followed him into the room within two minutes, being detained in the shop at the time by a customer, and found Mr. Shepherd sitting on the sofa, with the bottle in which the prussic acid had been placed, empty and on the table. After a few words with Mr. Shepherd, Mr. Stringer went and fetched the nearest surgeon, and returned with Mr. Pierpoint, who found the deceased lying on the floor, but still alive. After a vain attempt to excite vomiting and administer ammonia, Mr. Shepherd heaved two or three sighs and died. From the evidence of Mrs. Stringer on the inquest, it appeared that she, hearing footsteps in the parlour above her head, went up stairs, and looking through a glass-door, saw the deceased drinking something. She then went down stairs, and having again, in about ten minutes, heard the footsteps of a person passing quickly, went into the room, and found Mr. Shepherd alone, and on the floor. Mrs. Hill, it also appeared, entered the parlour on the departure of Mr. Stringer for the surgeon, and met her brother, who, *advancing* towards her about a *yard* into the room, complained of being sick, and shortly afterwards fell upon the ground. It should be observed, that previously to taking the poison, Mr. Stringer had drunk some water in the shop, which may have delayed its operation. There was no evidence of the occurrence of either convulsion or shriek.

The following were the appearances of the body after death: the countenance, particularly the lips, were livid, the shoulders and posterior part of the trunk purple. Dark fluid blood flowed freely on dividing the integuments; the lungs were considerably congested with dark blood, and the right auricle and ventricle of the heart and the vena cava were found full of blood of the same character; but the left ventricle was firmly contracted, and quite empty. All the abdominal viscera were natural, and the brain healthy, but full of blood. The stomach, particularly at its cardiac extremity, had a very vascular appearance, and in some of the patches oozing of blood had evidently taken place. The other parts had a brownish appearance. About an ounce of raspberry-coloured fluid was found in the stomach, which smelt very strongly of almonds, but five out of six medical gentlemen failed to perceive any odour of prussic acid upon approaching the body, either before or after it was opened.

A sample of the acid was then forwarded to Mr. Taylor, who ascertained that the strength of the acid used in this case was rather more than 1.9 per cent., very

\* *Journal de Chimie et Toxicologie*, and *Gaz. Méd.* Avril 17, 1847.

† *Prov. Medical and Surg. Journal*, June 30, 1847.

nearly that of the acid of the London Pharmacopœia. The bottle forwarded to Mr. Taylor was found also to contain exactly 105 drops, or 98 grains, and corresponding to 1.87 real acid, which was the quantity swallowed by Mr. Shepherd, though, according to the evidence of Mr. Stringer, the quantity he measured out was 120 drops of the same acid.

This case adds another instance to those now of no uncommon occurrence, where acts of volition of the most decided character have been performed after large doses of the poison. The absence of the shriek and of convulsions, and the non-detection of the odour of the poison in the body after death by several observers, are also points worthy of notice.

25. Dr. S. C. Sewell, of Montreal,\* gives the following case of poisoning by prussic acid:—A hypochondriac gentleman took 7 drachms of the acid, of the estimated strength of 3 per cent. Previous to swallowing the poison he locked himself in his room, but after about a minute unlocked the door, and cried out, "Come to me quick, I am dying." A servant immediately entered the room, and found him lying on his back on the sofa, with his legs crossed, insensible, and snoring. Dr. Sewell arrived in twenty minutes. He was then dead, and presented the appearance of profound slumber; his legs crossed, his arms by his sides, and his eyelids firmly closed. At the end of 20 hours the body presented the following appearances:—The eyes brilliant, the face and lips livid, and the muscles, with the exception of those of the legs, flaccid. Dr. Sewell states that there were no convulsions; and he says that he thinks it probable that the patient "did not give the alarm until he found the acid working on him; at any rate, he walked from the table to the door and unlocked it after taking the poison, called for assistance, and then walking to the sofa, stretched himself on it."

#### STRYCHNIA.

26. *Poisoning by Strychnia—Recovery.*—A remarkable instance of recovery from a large dose of this poison has been recorded by Dr Anderson.† A Mr. B. had suffered severely from the tic douloureux, for which he was in the habit of taking  $3\frac{1}{2}$  grains of hydrochlorate of morphia at a dose. Upon the present occasion he bought, as he supposed, some fresh morphia, but which he observed had a yellowish cast. He took the same day  $3\frac{1}{2}$  grains of this powder, and observed that it had a very bitter taste. Soon afterwards he experienced numbness in the back of the legs, which he referred to cold. However, he left his home, and proceeded a short distance on business, the same sensation continuing, with a general feeling of indisposition. The numbness was soon accompanied by a sort of dragging of the legs, so that "he had to put his hands at the back of his thighs in order to push his legs along." This was now about two hours and a half after taking the poison. This want of power, however, did not increase; but while describing his symptoms to a friend he suddenly lost his balance and fell backwards, and upon rising became more nervous and alarmed. He then experienced more difficulty in walking, and could not get on without support. He proceeded home, and, before stepping into bed, took a *second dose* of the same powder. This was about five hours since the first. In less than ten minutes after this he was seized with tetanic spasms, affecting the legs and muscles of respiration. He was raised in bed, which relieved the sense of suffocation, but the spasms of the leg, back, and chest continued, and followed each other every ten or fifteen minutes. The numbness and dragging of the muscles, which had been continuous during the first five hours, now left him during the intervals of the spasms, and he suffered only from exhaustion. His intellect remained clear throughout, and his hearing became very acute. The paroxysms lessened in frequency after a time, when they suddenly returned in all their former violence. The symptoms then ceased, about thirteen hours after the first dose was taken, and the patient, suffering only from extreme exhaustion, gradually recovered. Little or no medical treatment was adopted. Dr. Anderson afterwards clearly proved the nature of the poison by a careful analysis.

\* Brit. Amer. Journal of Med. and Phys. Science, Nov. 1847, p. 169.

† Monthly Journal of Medical Science, Feb. 1848.

Dr. Anderson draws attention to the following points, as possessing interest: 1. The dose was well ascertained, as the patient weighed it himself. 2. The largeness of the dose. 3. The gradual and slow approach of the symptoms, and the postponement of the tetanic spasms until the second dose had been taken. How far the effects of the strychnia were influenced by the large doses of morphia, which the patient was in the habit of taking, it is difficult to say. But one case, related in the "*Journal de Pharmacie*,"\* records the fact, that a student of dissipated habits swallowed, after drinking, 2 grammes (upwards of 30 grains) of this poison, and that tetanus did not follow until after a long time. Hence we may suppose that intoxication in this, and the habitual use of morphia in the former case, might have delayed the operation of the poison.

27. In the "*Philadelphia Medical Examiner*"† will be found a report of another case of poisoning by strychnia, taken by mistake for morphia. It is extremely interesting in many points of view; for, in the suddenness of the effects, the smallness of the dose, and the rapidity with which it proved fatal, it is without a parallel. The quantity supposed to have been taken was about a quarter or half a grain of the sulphate, and it appeared probable that the effects were manifested in less than five minutes, and that death occurred within twenty minutes from taking the poison. The symptoms were such as are generally observed in similar cases, but the tetanic paroxysms were remarkably severe.

28. *Poisoning by Aconitina*.—Dr. Golding Bird has communicated to the Medical Society of London‡ a case of this kind, which is peculiarly interesting, as being the first recorded case of poisoning by this vegetable alkaloid. A gentleman of high intellectual attainments and good station in society obtained, from his own prescription, two grains and a half of aconitina. It appears probable, from collateral evidence, that he must have fallen almost immediately upon swallowing the poison, and struck his head against the furniture. Either the poison or the blow must have caused violent vomiting, as the floor of his room was found flooded with vomited matter. When seen by Dr. Bird, eight hours after taking the alkaloid, the patient was fearfully collapsed, the surface was cold, sweating, and quite pale, and the heart's action almost imperceptible; the pupils acted, and there was no paralysis. His intellect was unimpaired; but he suffered from severe vomiting, which recurred every two or three minutes, and was performed by a sudden jerking action of the abdominal muscles, accompanied by a loud shout, probably dependent upon a sudden contraction of the diaphragm. Every attempt to swallow was followed by the spasmodic contractions so characteristic of hydrophobia, but they were not renewed by the sight of water. All these convulsive movements were, however, easily excited by simply touching him. The treatment adopted was a warm bath, with a turpentine enema, and a mustard poultice applied to the region of the stomach. The pulse became more perceptible towards evening, and the patient calmer; but as the spasms were still easily excited by any attempt to swallow, it was deemed advisable to administer an enema of beef-tea and yolk of egg, with ten drops of tincture of opium. He passed the night in a state of spasm and exhaustion, but his intellect was most perfect, and even vivid. After a hard struggle, he emerged from the effects of the poison, and was pronounced convalescent the next day.

This case offers a few points of interest in a toxicological point of view. The constant and repeated vomiting, the great depression of the circulatory system, as well as the spasmodic state of the muscles, are symptoms observable also where the root or extract of aconite has been used. Of course, as was to have been expected, all these symptoms were in this case considerably aggravated. But Dr. Bird's opinion, that the vomiting and hydrophobic state of the patient are characteristic of poisoning by this alkaloid, still requires confirmation. It may, however, be remarked, that where the root or extract has been administered to cause death, either complete insensibility, or stupor almost amounting to it, has been observed in many instances; while in the present case the intellect remained perfect, and even acute during a great portion of the time occupied by the operation of the poison. Lastly, when we consider the dangerous effects that are so apt to follow the administration of even small doses of the alcoholic extract or

\* N. S., vol. x., p. 36.

† May 1847.

‡ Lancet, January 1, 1848.



tincture, we cannot but be surprised at recovery where two grains and a half of the active principle had been taken. It was probably due to the early and severe vomiting.

29. *Poisoning by Camphor*.—A young man, æt. 20, of a robust constitution, swallowed, bit by bit, about two drachms of camphor. He soon became affected with headache, and, upon going into his room, stripped and danced, and endeavoured to jump out of window. A surgeon was sent for, who found him in a state of great excitement: his pulse was 180, and small; the conjunctivæ were injected, the pupils dilated: respiration hurried, with the breath having the odour of camphor; face pale; difficult and frequent micturition; the urine was clear, and strongly impregnated with the drug. Some opium was given him, and he vomited several pieces of camphor. He then became very drowsy, but was not allowed to sleep until the effects had in some measure passed off. He then slept for three hours, and awoke perfectly unconscious of what had happened.\*

30. *Accidental Poisoning by Cannabis Indica, or Indian Hemp*.—Mr. Barrow, of Clifton, to alleviate the urgent symptoms of dysmenorrhœa, prescribed fifteen drops of the tincture of cannabis indica in three doses, administered at intervals of two hours. After the last dose the patient became drowsy, but no notice was taken of this symptom, as she had passed a restless night. In the evening she partook of her usual dinner and one glass of wine. During the meal she was incoherent in her speech, and shortly afterwards vomited. She now became unconscious, her extremities cold, her eyes wide open and staring, with contracted and insensible pupils; there were also strong convulsions, and involuntary twitchings of the muscles generally, which continued for a day or two, whether she were awake or asleep. The state of complete insensibility lasted for about a quarter of an hour. During the night there remained a partial degree of unconsciousness, and all the other symptoms in a milder degree. The patient gradually recovered under the use of stimulants. The alarming symptoms in this case would appear to have been due to some idiosyncrasy on the part of the patient, as the dose taken was otherwise disproportioned to the effects produced.

31. *Poisoning by the Seeds of the Datura Stramonium*.—The following case is reported by Mr. Stobo, of Tortola, West Indies.†

C. B., aged 5 years, a stout and healthy boy, the son of Musta parents, ate more than a drachm of the seeds of datura stramonium, taken from a fresh ripe apple; the seeds having been roasted over a fire. When seen, about an hour after, he was much excited, and rather delirious, clinging to the woman who had him on her lap, under the impression of some immediate danger. His pulse was about 120; face flushed; eyes brilliant, pupils dilated; there were also convulsive movements of the limbs and neck, and thick frothy saliva issued from the mouth. A warm bath, calomel, and repeated emetics were administered; the stomach-pump was then applied, and an injection of soap and water thrown up the rectum. The matter evacuated both from the stomach and rectum contained many of the seeds. After this the symptoms appeared relieved, but the tossing of the limbs increased, and there was much flushing of the face; the skin also, naturally of a dull olive colour, became intensely red. He was then bled twice, which relieved him. He continued much in the same state for a day or so; a state of vigilance having succeeded that of terror. The restlessness wore away, and he recovered in the course of two days.

#### CARBONIC ACID.

32. *Double Poisoning by Carbonic Acid*.—Several interesting questions connected with poisoning by carbonic acid are illustrated by a case reported in the "Annales d'Hygiène."‡

Godin and his wife kept a grocer's shop at Paris, and were in difficulties. On the 15th January, 1847, as they did not appear in their shop at the usual hour, one

\* Brit. Amer. Journal of Medicine, and Monthly Journal of Medical Science, Apr. 1848.

† Medical Times, October 9, 1847.

‡ Considérations Médico-Légale sur l'Asphyxie, par le Docteur Henri Bayard; Annales d'Hygiène Publique, Jan. 1848, p. 148.

of the servants knocked at the door of their bedroom, and on Godin desiring him to enter, he perceived by the light of a Carcel lamp, which was still burning, a brazier filled with the ashes of charcoal, a bottle of spirits of wine, and a tumbler. Godin desired the servant to call his brother. The neighbours, informed of the circumstances, came in, and found the wife of Godin lying near her husband, and dead some hours. A medical man was called, who attributed the trifling indisposition of Godin to partial asphyxia, and partly perhaps to the alcohol. Godin stated that he and his wife had determined on suicide; that he had first filled the brazier with charcoal, and that he and his wife, having closed the chimney and the door, went to bed, leaving the lamp alight; that soon after, his wife complained of giddiness, and that he, in his turn, was taken ill; but that, about two o'clock in the morning, having come to himself, he found his wife dead and cold, and the charcoal burnt out; that he then got up, and by the light of the lamp, which was still burning, went into his shop for a bottle of spirits of wine, of which he drank three large glasses, with a view of hastening his death. The wife, 22 years of age, had died of asphyxia. There was no trace of violence on the body. The circumstances of the case, as stated by Godin, appeared to the magistrates so improbable, that they requested MM. Lassaigne, Charpentier and Bayard to institute experiments as tests of the history given by Godin. The three questions submitted to the reporters were—1st. The brazier being filled with the same quantity of charcoal as on the night of the 15th, and the Carcel lamp being lighted, and placed in the position where it was found, would that lamp go out, and how long would it continue to burn?—2d. Is it possible that, in a state of partial asphyxia, Godin could, as he affirmed, leave his bedroom with the lamp, mount upon an open drawer, reach down the bottle from the third shelf, then go back to his bedroom, holding the bottle in one hand, and the lamp in the other?—3d. Is there any analogy between the symptoms of asphyxia and those which would be produced by three large glasses of spirits of wine?—*Answer to question 1.* The bedroom having been arranged exactly as on the night of the 15th, the brazier was filled with charcoal, in the presence of Godin, and of a female who had seen it charged on that night, the Carcel lamp was also charged with oil, and three candles were placed, the first on the window-sill, the second on the ground, and the third within sixteen English inches of the ceiling of the chamber. These arrangements being made, the charcoal, lamp, and candles were lighted, and the chamber closed, a piece of glass having been let into a hole in the door, to observe what passed within.

The door of the room was shut at 20 minutes past 3, when the lamp was burning brilliantly; the flame soon lowered, and at 40 minutes past 3 was diminished half its size; the circular edge of the wick blackened towards 20 minutes past 4, the lower part still retaining its original colour; at 28 minutes past 4, the right-hand side of the flame went out, and precisely at 5 o'clock it ceased to burn; at 45 minutes past 4 the upper of the three candles went out; at 5 o'clock, the two other candles continued to burn, though dimly. The door was now opened, when the charcoal was found covered with ashes, but still burning—exactly one half had been consumed; 616 grains of oil had also been burnt. Thus it will be seen that the lamp burnt 1 hour and 40 minutes; the upper of the three candles 1 hour and 25 minutes; while the two others continued to burn dimly after the lapse of 1 hour and 40 minutes. On calculating the size of the apartment, and allowing for that of the furniture and the two inmates, the volume of air contained in the chamber was found to be 83 cubic feet, English. The quantity of charcoal burnt in this space, allowance being made for cinders, moisture, and volatile matters, amounted to 6106 grains, English; which in burning must have absorbed 16,283 grains, English, of oxygen, and formed 22,389 grains of carbonic acid, having a volume equal to 44,713 cubic inches, at 32° Fahr. of temperature and 30 inches of pressure. The quantity of carbonic acid, therefore, in the apartment at the time of the extinction of the lamp, must have amounted to  $\frac{27}{100}$ , and the air must have been composed as follows:—Nitrogen, 79, oxygen, 18.29, carbonic acid, 2.71. It should be borne in mind that the temperature of the air of the apartment was considerably raised, which accounts for the upper candle being first extinguished. As at the end of 1 hour and 40 minutes, when the lamp went out, there was 2.7 per cent. of carbonic acid in the air, with per-

haps a half per cent. of carbonic oxide, if we suppose the combustion to have been maintained with the same intensity, there would have been at the end of three hours 4.8 of carbonic acid; the lamp could not, therefore, have continued burning this time, as the experiments proved; and it is inconceivable that Godin could have lived in so deleterious an atmosphere. To render the experiments complete, the lamp was again lighted, and burned in a pure atmosphere for nine hours.

The reporters answer the *second question* in the negative. They were of opinion, from a careful examination of the actions which Godin must have gone through in order to possess himself of the bottle of spirits of wine, that he could not have performed them in his alleged state of partial asphyxia.

They are equally satisfied as to the answers to be returned to the *third question*. Had Godin swallowed the large quantity of spirits of wine which he pretended to have taken, he must have been poisoned; but so far from this being the case, he was found in a condition to reply to several questions addressed to him by the medical man called to his assistance.

The principal value of this case consists in the experimental inquiry to which it led, and the light thereby thrown on the quantity of carbonic acid necessary to extinguish flame. The extinction of the candle placed in the upper part of the room, while the others still continued to burn, is a point of some interest. The explanation of the reporters, however, appears to be defective, inasmuch as they attribute the circumstance solely to the greater expansion of the air in the higher parts of the apartment, overlooking the continual additions of carbonic acid of a high temperature, which are being made to the upper strata of the air during the combustion of the charcoal.

#### ANIMAL IRRITANTS.

33. *Poisoning by Cantharides—Recovery.*—The following particulars are abstracted from the “Medical Gazette,”\* the case having occurred in the practice of Dr. Fisher, of Edinburgh.

On the morning of the 29th of April, Dr. Fisher was summoned to visit Mr. G., a gentleman æt 26, and of a full habit of body. He had been seized with sudden illness during the night, and was found labouring under incessant vomiting and urgent thirst, accompanied by a burning pain in the throat and stomach. His features were expressive of great anxiety, the tongue was swollen, and thickly coated, the pulse 130, weak and tremulous, and the matter vomited had a greenish colour and offensive smell. There was pain in the lumbar region, and frequent and painful micturition, and the urine was turbid and scanty. He was placed in a warm bath, and allowed to drink very freely of a strong solution of gum arabic, and fomentations were applied to the abdomen. Under this treatment, with opiates, he gradually recovered; the only symptoms requiring more active interference being those of the urinary organs.

It appeared that the cantharides had been taken by mistake for jalap, and that about two teaspoonfuls, mixed with water, was the quantity swallowed. The remaining portion of the powder, Mr. G. asserted, was equal to about half what he had taken, and this was found to weigh forty grains, and was of good quality. “From these facts, and allowing for a little adhering to the side of the vessel in which the patient mixed his dose, I think,” says Dr. Fisher, “the quantity of cantharides swallowed may be fairly estimated as having somewhat exceeded a drachm.” As vomiting occurred immediately upon swallowing the poison, the favorable issue was probably due to this cause; other cases, however, have been recorded, where a patient has recovered after taking ʒj of the powder.

34. *Poisoning by Sausages.*—The “Journal de Pharmacie”† contains the following particulars of the effects of sausages upon three inhabitants of Wurtemberg. The sausages were composed of the liver and brain of pork, bread, and milk, and were seasoned with spice, and smoked. One of the three vomited, had colic, lost his sight, and died in ten days; the second, also, lost his sight and voice, had coldness of the extremities, and was unable to swallow, unless with great diffi-

\* May 14, 1847.

† Fevrier 1848.



culty; his eyelids also became paralysed, and at last he died. The third suffered from similar symptoms, but recovered.

Some contributions have been made, during the past year, to the subject of Toxicology generally. Of these the following are deserving of notice:

35. *Symptoms arising from Natural Causes, very similar to those produced by Poison, and followed by Death*—Dr. Letheby has communicated to the "*Pharmaceutical Times*"\* several cases of internal hemorrhage, arising from natural causes, in which the symptoms and mode of death were very similar to those caused by poison. In those cases "the attack is sudden; there may be great pain in the abdomen; a constant and violent sickness; then collapse and death—all occurring within a few hours, and supervening upon perfect health. The necessity, then, of a careful investigation in all cases where death has occurred under suspicious circumstances, and of an early post-mortem examination, are apparent."

CASE I. M. A. C., æt. 29, married fifteen months, with regular catamenia, a few days before her death complained of pain in the lower part of the abdomen. On the morning of Thursday, March 13th, after partaking of a hearty breakfast, she was seized suddenly with severe pain in the abdomen, and became sick. A surgeon was sent for, who exhibited opiates, and applied a mustard poultice to the abdomen. At the next visit, about two hours afterwards, he found her with a pale and anxious countenance, blanched lips, dilated pupils, cold extremities, and small pulse. There had been incessant vomiting, and she had complained of urgent thirst. After the exhibition of stimuli, she dozed off, and died about five o'clock. She expired without the least struggle, about nine hours after the first seizure.

Some suspicion being attached to the case, Dr. Letheby was called upon to make a post-mortem examination. This he did two days after death, and found the surface and features quite blanched. The heart was flabby and empty, and the lungs natural. The abdomen was dull and fluctuating upon percussion, and upon opening it about a pint of reddish serum escaped, and a large clot, weighing two pounds, was found beneath the great omentum, and extending into the lower part of the pelvis. The source of this hemorrhage was found to be the left Fallopian tube, which had given way, having been over-distended and rent by an arrested ovum. All the other organs were healthy, the stomach nearly empty, and no trace of poison could be discovered.

CASE II. A. M., æt. 31, married, and the mother of three children, miscarried about three months before her death. Since that time she had occasionally complained of pain in the left side of the abdomen. After her dinner, on January 27th, she was suddenly seized with a violent pain in the abdomen, and in a few minutes she began to vomit, and this continued, at intervals of ten minutes, for nearly two hours. Her medical attendant saw her about four o'clock the same day, and found her in a state of extreme depression, with symptoms similar to those observed in the last case. Stimulants were given, but syncope coming on, she gradually sunk, and died about twelve hours after the commencement of the illness. The post-mortem appearances were similar to those presented in the first case; for in this also the cause of death was internal hemorrhage from the ruptured left Fallopian tube.

CASE III. E. W., æt. 27, married, and had borne one child. She had been well up to the morning of her attack, when she was suddenly seized with pain in the abdomen. Sickness and collapse then occurred, and she died ten hours and a half from the seizure. The cause of death in this case also was internal hemorrhage, due to the rupture of the right Fallopian tube. No traces of poison were detected in the stomach or its contents.

In remarking upon these cases, Dr. Letheby says, "that if the inquiry be instituted directly after death, there will not be any difficulty in tracing the cause, as it will be discovered by the post-mortem examination; not so, however, if a long time has been allowed to go by. We can suppose a case, for example, in which suspicion is not aroused until some months have elapsed, and then we have not the positive evidence of the post-mortem inspection to clear it up. Decomposition may have removed every trace of the cause of death, and now we must

\* January 9, 1847.

rely upon the symptoms and upon the manner of their accession. If a woman, when did she menstruate last? How was she seized? What was the character of the vomited matter? Were there great faintings before death? Did she look pale? And did she die without struggle, or coma or delirium? And, after death, was there the same blanched appearance of the countenance, the lips, and the mouth? These are the chief points to be sought into; and out of them, together with the absence of a mineral poison in the body, we are to frame an opinion. Arsenic, and oxalic acid, and bichloride of mercury, and even hydrocyanic acid, and the mineral acids, and the alkalies, may produce symptoms somewhat like the preceding; but then the vomited matter would be discoloured or bloody (?); and in the case where a metallic poison had been used, it would be readily detected in the body while any of its tissues remained. I do not know of any organic poison, whose effects would at all simulate those arising from hemorrhage; in opium, where the approximation would be nearest, there would be profound coma.\*

The above cases, as well as others alluded to in the same paper, are valuable, as clearly demonstrating the necessity of a medical opinion in all cases where death happens either suddenly or after the occurrence of suspicious symptoms.

36. *A Review of the Various Antidotes.*—A paper on this subject will be found, by M. Bouchardat, in the "*Nouvelle Encyclographie des Sciences Médicales*,"\* in which a review of the whole system of toxicology, as far as regards the application of antidotes, is taken by the author. As there does not seem to be much new matter in the essay, the reader is referred to the paper itself.

With regard to the mineral acids, he recommends the exhibition of magnesia, suspended in water, to counteract their effects; and the after administration of a solution of bicarbonate of soda, with a view of forming a soluble salt with the acid, so as to render it capable of absorption by the blood.

With regard to arsenic, he strongly coincides with M. Bussy on the efficacy of magnesia in cases of poisoning by this substance.

In poisoning by the vegetable alkaloids, opium, and the narcotico-acrids, he believes that he has employed with success a mixture of about three grains of iodine, and six grains of iodide of potassium, in about a pint of water, of which a small glassful is to be taken from time to time. But he does not recommend it to the exclusion of all the usual means of combating the effects of these poisons, nor does the *modus operandi* of the antidote appear very obvious.

37. *Detection of Poisons in the Urine.*—Dr. Letheby† has been led to inquire whether the various poisons might not be eliminated by the kidneys, and if so, whether their existence in the urine might not furnish a hint for the treatment of cases of poisoning; and, thirdly, whether their detection in the renal secretion would not supply evidence of a valuable character for the guidance of the medical jurist.

He has detected all the mineral acids and oxalic acid in the urine, as well as soda, potassa, and ammonia, nitrate of potassa, iodide of potassium, sulphate of magnesia, &c., and some of the salts of arsenic, lead, mercury, copper, iron, and silver. With regard also to the organic poisons, he has found that their active principle (in case of opium, belladonna, hemlock, aconite, &c.) would in part pass through the system and appear in the urine unchanged.

With regard to the second question, he found that diuretics were of great value in eliminating poisons administered to animals, and that they assisted considerably in their recovery.

The third question was an important one, as the urine might be the only secretion at the disposal of the chemist; the evidence also deduced from it might be of a positive and satisfactory kind; the poisons are also more readily detected in it than in the tissues, and they exist there to a larger amount than in any other part of the body.

The conclusions to which he has arrived are these: 1st. That many poisons are absorbed into the circulation.

2d. That these poisons are eliminated by the kidneys, and can be detected in the urine, either by their chemical or physiological reactions.

\* *Fevrier* 1847.

† *Lancet*, Jan. 23, 1847.

3d. That these facts, together with others, from experiment, point to the value of diuretics in the treatment of cases of poisoning.

4th. That it is possible to obtain, from an examination of the urine, some of the most valuable and certain evidences regarding the administration of a poison.

5th. That we should not omit to examine this secretion in every case of suspected poisoning.

38. *Test of the Presence of Minute Quantities of Alcohol.*—As the determination of minute quantities of alcohol is a chemical point of some importance in judicial cases, the following plan is proposed.\* The fluid to be tested, if coloured, or a mixed one, is to be distilled in a water-bath until one-third passes over. Should the liquor contain any acetic acid, this should be saturated, previous to distillation, by carbonate of soda, in order to remove the odour of vinegar, which might interfere with the subsequent test. Into the distilled fluid should be dropped a crystal or two of chromic acid and the liquor stirred. If the smallest quantity of alcohol be present, the green oxide of chrome will begin to be disengaged, and at the same time the smell of aldehyde is distinctly perceptible. By means of this test it is possible to distinguish a drop of alcohol in an ounce of water. Bichromate of potassa and sulphuric acid will answer sufficiently well, if chromic acid be not at hand. The simplest way to apply the test is as follows: drop a few grains of powdered bichromate of potassa into a small flat glass (which tapers to the bottom) containing the solution to be examined, and add a few drops of oil of vitriol. If alcohol be present, the green oxide is perceptible on the surface of the undissolved salt, and the odour of aldehyde is easily recognised.

39. *Action of Poisons.*—Mr. J. R. C. Walter, in speaking of a poisonous leguminous plant from Swan River, New South Wales,† says, that “when the seeds fall on the ground, the wild pigeons greedily feed and fatten on them; if the crops of these pigeons, containing the seed, be eaten by dogs, they die, yet the pigeons themselves, when dressed, are good food, and at that season are eaten in large numbers by the settlers. The flesh of sheep and cattle that have died from eating the plant, is poisonous if eaten raw by dogs, but when cooked, either by boiling or roasting, it ceases to be poisonous.” A report on the poisonous action of this plant, by Dr. A. Frampton, is appended to Mr. Walter’s paper.

## § II.—*Infanticide.*

40. *Sinking of the Lungs in Water no Proof of Still-birth*—Dr. Davies, of Hertford, has published the following remarkable case, as evidence “that the sinking of the lungs in water, either wholly or divided into parts, is not an absolute proof that a child has been born dead.”‡

On the 27th November, 1847, the body of a fœtus, which had been found buried in a garden, was brought to Dr. Davies. The body was thirteen inches long, the eyelids were adherent, the testicles had not descended, and it weighed one pound and three quarters. From these and other particulars, it was supposed to have arrived at between six and seven months of utero-gestation. The lungs were firm, like liver, and sank, both wholly and in parts, when put into water. The right lung was of a dark mahogany colour, but the upper lobe of the left lung was of a lighter hue than any other part of the lungs, and this, also, sank in water.

An old woman, who was examined at the inquest, stated that she was sent for to the mother, and that when she arrived, she found the child, with the placenta attached to it, in the close-stool, and she noticed that the child moved its arms. She then wrapped it up, with the placenta, in flannel. It continued to move its limbs for *ten minutes*, but it uttered *no cry*. It was not separated from the placenta until it had ceased to move.

This case affords a distinct proof that a child may be born alive, and yet that after death the lungs may be found to sink in water. In the absence of evidence of any very distinct and effectual effort to inspire, it is to be regretted that the upper lobe of the left lung, which is described as being of a lighter hue than any

\* Monthly Journal of Med. Science, and Pharmaceutical Times, July 17, 1847.

† Pharmaceutical Journal, vol. vi. p. 311.

‡ Med. Gaz., Dec. 10, 1847.



other part of the lung, was not carefully examined, with a view of ascertaining whether or not the air-cells were developed. If no developed air-cells had been discovered, the case would have been very valuable, as proving the possibility of a child having been born alive, and continuing to live several minutes, without breathing—a possibility which it is of much importance to establish. It is obvious that the lighter hue of the upper lobe of the left lung could only have been due to the contact of air with the external surface of the lung, or to its admission within its texture. If the former alternative were the true one, other portions of the lung ought to have undergone the same change; the latter alternative, therefore, would appear the more probable. In which case we should have an additional example of respiration so imperfect as not to render buoyant even the portions of lung which have received air. It is probable that these cases are more numerous than is generally supposed.

41. *Fracture of the Parietal Bone—the result of Violence or Accident?*—The following case is interesting for the satisfactory manner in which the question has been answered.

Dr. Wharrie\* was called upon to examine the body of an infant which had been found buried secretly at Calder. According to the mother, who was unmarried, but who had borne three children, she had undergone a severe labour, extending over three days, and that no one was with her at the birth of the child except her mother, whom she considered as capable of doing all that was required. The child, according to the account of its mother, and the neighbours, who came in after the delivery, was stillborn, and was afterwards secretly buried. It was, however, discovered about a month after this time, and the matter properly investigated. The body of the child presented no external injury, but the cranium, near the posterior fontanelle, was swollen and puffy, and when pressure was made upon the forehead, blood issued from the right nostril. The body exhibited signs of incipient putrefaction. The child weighed seven pounds, and measured 21 inches. Upon opening the chest, the lungs were found of a dark colour, with sharp edges, and occupying but a small space at the posterior part of the chest, and not covering the heart or pericardium, and the diaphragm was arched upwards. The lungs did not crepitate at all, and when placed in water readily sank, and all the pulmonary vessels were found empty. The foramen ovale was open, and the right cavities of the heart devoid of blood. Upon examining the scalp, a small quantity of blood was found extravasated beneath the pericranium at the part where the scalp felt puffy, as well as a small amount on the right side. Upon removing this, a fissure was seen at the edge of the left parietal bone, close to the line of the sagittal suture, and near the posterior fontanelle. There was no depression or discoloration of the scalp at this part, or any other sign of a blow having been inflicted. The brain was soft, and there was slight extravasation in its substance.

From these appearances, Dr. Wharrie concluded, that the child had been born at the full period, and that it had not respired, even feebly: that the immediate cause of death was simply the violent contractions of the uterus, or, possibly, the prolapsus and consequent compression of a portion of the umbilical cord. There was, therefore, no evidence of infanticide, nor, as it afterwards appeared, of concealment of pregnancy.

42. Another case, bearing upon this point, is quoted from a recent number of the "*Gazette Médicale de Paris*."† The body of a child was exhumed for examination, its death having been connected with suspicious circumstances. The mother's statement was, that suddenly, while sitting near the fire, she was seized with labour-pains, and that while endeavouring to reach the bed, the child was expelled, and falling upon the floor, injured itself in the manner hereafter to be described. The midwife stated also that the child died about four hours afterwards. It could not be ascertained whether the umbilical cord had been broken at the moment of birth. It should be stated that the mother was a primipara, aged 21, and that the floor of the room in which the delivery took place was made of planks, which were worn into holes in some parts, and covered with lime and gravel. The body of the infant was that of a female, strong, stout, and

\* Monthly Jour. of Medical Science, and Med. Gaz., January 1847. † 11 Mars, 1848.

well formed; with a bandage round the abdomen, covering the umbilical cord, which was firm, dry, and half an inch long, with an irregularly-cut surface. Over the middle of the left parietal bone there was a stellate wound, and a rounded layer of the scalp, adhering only at its anterior and exterior margin, covered the wound. The bone was bare in this part, and the pericranium partially detached. An extensive ecchymosis raised the scalp from the cranium, and the bones were infiltrated with blood; otherwise the cranial bones were healthy. On the inner surface of the cranium, at the part corresponding to the external wound, there were a red discoloration and a fissure, and considerable effusion of blood between the hemispheres. The brain, otherwise, was healthy, as were the heart and lungs, though a small extravasation was found also on the convex surface of the liver. The umbilical arteries were quite open, and divided near the umbilicus, and the stomach held a clear liquid, in which were observed a few streaks of blood.

The conclusions deduced from these appearances were: 1, that the wound in the head could not, by any means, be the result of a fall during delivery in the standing posture; 2, that the extent of the wound, the laceration, and the effusion beneath the membranes, proved violence; and 3, that death had been caused by violence, and partly, probably, by hemorrhage, and that the fissure in the skull confirmed the opinion as to violence. In answer to other questions, the medical witnesses stated that it was improbable that the mother had inflicted the injury during labour, or that the labour itself had been the cause, as the process was generally a gradual one; and, moreover, that it was unlikely that the mother should have done it after labour, as the state of exhaustion would prevent her.

The possibility of extensive injuries, attended with extravasation, and even fracture of the bones of the cranium, being inflicted on an infant during labour, has been sufficiently established by the observations of Dr. Schwörer, of Fribourg. Where they are the result of violence, *purposely applied*, the extent of mischief is generally very much greater than in either of the above cases. Wherever the injury is slight, there is a fair presumption of accident.

### § III.—Feigned Diseases.

43. *Application of Ether*.—M. Bouisson, of Montpellier,\* has entered somewhat minutely into the medico-legal use of ether inhalation. The cases in which he recommends its employment are those of feigned deafness, dumbness, stammering, and contraction of the back or limbs. After quoting M. Baudens' case (see "Abstract," Vol. V. p. 320), he adds, from his own experience, a case of feigned contraction and atrophy of the muscles of the throat readily detected by the use of ether. The atrophy was produced by the application during the night of a tight bandage. The author points out at some length the bad use that may be made of ether inhalation by non-professional persons, and quotes from the *Presse* newspaper a revolting case of rape committed by a dentist, who employed the ether for professional purposes.

### § IV.—Unsoundness of Mind.

44. *Is Consciousness of Right and Wrong a just Test of Partial Insanity?*—The plea of insanity in criminal cases has been lately examined by Dr. Robertson, of Yarmouth.† The following is an abstract of the conclusions at which he has arrived.

Under the term partial insanity, as opposed to dementia and idiocy on the one hand, and to mania on the other, are included the following varieties:—monomania, moral insanity, and instinctive insanity. The existence of the latter, however, is not recognized by the law of England.

1st. *Monomania, or partial derangement of the understanding*.—This variety is characterized by the presence of an intellectual delusion or hallucination, which leads naturally to false deductions and to insane conduct. A person so affected may, however, betray no symptoms of mental derangement on a subject uncon-

\* *Gazette Médicale*, 21 Août, 1847.

† *The Edinburgh Medical and Surgical Journal*, No. 172, July 1847.

nected with this erroneous impression. Dr. Robertson, however, does not agree with Dr. Conolly that the disease is thus limited in a large proportion of such cases, but states that a further examination of the phenomena of the disease will show that there are present a series of delusions having reference to the patient himself, or his friends, and that though he can argue reasonably and converse rationally on all subjects, yet that there generally exists a morbid state of the moral principle or conscience, which state is evinced by the perversion of one or more of the desires or affections, a perversion existing prior to the manifestation of any intellectual disorder. The delusion, then, is but the progress of disease in a mind already disordered.

This view, that the primary disorder in monomania is disease of the moral principle, involving the loss of consciousness of right and wrong, as evinced by perversion of one or more of the moral feelings, is corroborated by the testimony of Pritchard, Ray, and Georget, and also by an analysis of the progress of the healthy mind to intellectual misgivings and doubts as to the truth of Divine revelation.\* In this, as in monomania, conscience first ceases to be the regulating principle of the character, and from this perversion of the moral principle flow inventions of the mind, which in their turn become the regulators of its emotions.

The order and succession of the morbid phenomena above sketched, are well illustrated in the case of William Stalker, who was tried for the murder of his wife at the Cumberland Lent Assizes, February 1847,† in which the supervention of intellectual delusions was preceded by disease of the moral principle.

2d. *Moral insanity*.—This form consists in morbid perversion of the desires and affections, unattended by disorder of the intellectual faculties. In this, as well as in the case of monomania, the influence of the moral principle or conscience has been neglected, or is torpid or non-existent. Persons thus affected may be enabled to reason and support an argument upon any subject within their sphere of knowledge, and they may often display great ingenuity in giving reasons for their eccentric actions, and in accounting for and justifying their existing state of moral feeling. "In one sense, indeed, their intellectual faculties may be termed unsound: they think and act under the influence of strongly excited feelings, and persons accounted sane are, under such circumstances, proverbially liable to error, both in judgment and conduct."‡

This loss of power of the moral principle, evinced by the disordered action of one or more of the desires or affections, is followed after a time by weakness of the intellectual faculties, by which the sufferer becomes unfit for the discharge of the duties of life; his inability to appreciate moral guilt frequently rendering him a dangerous member of society. An instance of this form of insanity is seen in the case of John Howison,§ who was tried at Edinburgh in 1831 for murder, and executed, and thus "fell a victim to ignorance."

Conclusive evidence of general perversion of the moral feelings, or disorder of one or more of the affections or desires, therefore, "as clearly proves the loss of consciousness of right and wrong, annulling thereby criminal responsibility, as total loss of the intellectual faculties, or disorder of one or more of them, proves that the dictates of reason have ceased to exert their influence."

3d. The third variety of partial insanity is that termed *Instinctive Insanity*. This form is characterised by a sudden impulse to the commission of crime, seizing one whose intellectual and moral powers are alike healthy. In this form, there exists a knowledge of the impulse as well as a full appreciation of the extent of the guilt incurred, together with a striving against the impulse. The volition is here also diseased, and acts in opposition to the dictates both of judgment and the moral principle. A person thus affected "ne pré-ente aucune altération appréciable de l'intelligence ou des affections. Il est entraîné par un instinct aveugle, par quelque chose d'indéfinissable qui le pousse à tuer."|| Though this form is not recognized by our laws, yet persons labouring under it have been acquitted, when indicted for murder, on the plea of insanity.¶

\* Abercrombie's *Moral Feelings*, Lond. 1846, pp. 116 *et seq.*

† An account of this case is appended.

‡ See Abercrombie, *op. cit.*

§ *Edinburgh Law Journal*, No. 6.

|| Esquirol, *Des Maladies Mentales*.

¶ Case of Martha Brixey, *Times Newspaper*, 17th May, 1845.



45. *Plea of Insanity—Case of William Stalker—Acquittal.*—William Stalker was tried at the Cumberland Lent Assizes, 1847, for the murder of his wife.\* From his history, it would appear that, for some months previous to the murder, he had become unsettled and inattentive to his affairs, which state of mind had been attributed by his friends to disappointment with regard to a will. He became gradually more and more unsettled, and conceived a dislike to various members of the family, and on one occasion threatened the life of his medical attendant. On another occasion, he even mixed arsenic with the food of his family and servants. After this he was sent to the Cumberland Asylum, where he continued about six months, when he was removed, in opposition to the wishes of his medical advisers. On his return home, he began to conceive ungrounded jealousy against a man who had made honourable proposals to his daughter, and soon began to exhibit hallucinations. On the 29th of December, 1846, he returned home, and went into the adjoining farm in search of his wife. His son returned the same night and found his mother dead on the floor of the farmhouse. William Stalker was found the next day hidden behind a holly-bush, and, after attempting to escape, surrendered and confessed the murder, nor did he even vary in the story. On being informed by Baron Alderson that he stood charged with the wilful murder of his wife, he interrupted his lord-ship, and said, "Na, na, not wilful, not wilful, my lord." All the witnesses concurred in the opinion, that he was not in a position to distinguish right from wrong, and the jury accordingly acquitted him.

46. In the following case, also, the plea of insanity was successfully set up. Mary Sweetlove, a married woman, æt. 37, was charged with the murder of her infant son by drowning, at Sandwich. It appeared from the witnesses, that the prisoner and her family, during last winter, had been in very reduced circumstances, and, being unable to pay her rent, the landlord intimated that he could not allow her to remain in her lodgings any longer. This preyed so much upon her mind, that it appears she left the house with her son, and, being driven to desperation by the prospect of being turned from her home, she threw the boy into the dyke, where the body was afterwards found. It was also proved that, for some time previous to this affair, the conduct of the woman was such as to lead to the conclusion that her mind was affected. After the melancholy occurrence, she remained for some time in a wild and excited state. She confessed the murder; but was acquitted on the ground of insanity.†

47. *Double Murder—Plea of Insanity—Conviction.*—The following trial took place before the court of assize, at Ardèche. J. J. A. was accused of having murdered his wife and father-in-law, under the following circumstances. The prisoner was of a violent temper, and had been at variance with his father-in-law, but reconciliation having taken place, he and his wife went on a visit to his house. The next day, while the father was engaged with business, the prisoner and his wife went out into the garden; the latter, feeling fatigued, sat down at the margin of a pond, when her husband seized her, and, inflicting three wounds with a knife (which he had sharpened over night), threw her into the water. He then went into the house, and urged his father-in-law to come out with him into the garden, which he did, but he had hardly entered the court, when the accused twice stabbed him, and, throwing the knife on the roof, hid himself in a dark vault. Both his victims died.

From the time of his arrest his conduct was that of a deranged person, and, after refusing for a long time to answer any questions, he confessed the murder, saying, that he did it under the influence of an hallucination excited by the sight of the chain worn by one of the officials, who had been engaged with his father-in-law. The plea of insanity was set up, and before the court he appeared calm and collected, and stated that he had no cause of complaint against either his wife or father-in-law; that he was in daily fear of the police, and that he had sharpened his knife to defend himself, and not to kill his relatives. One medical man had previously recommended him to be confined, but others considered the insanity

\* For a full account of the case, see Dr. Robertson's paper, in *Edinburgh Med. and Surg. Journal*, July 1847.

† *Dublin Medical Press*, April 12, 1848.

feigned, and declined to pronounce any opinion on the state of his mind when he committed the crimes. The jury found a verdict of guilty, with extenuating circumstances.\*

48. *Suicidal Mania*.—A melancholy case of this kind occurred towards the end of last year, in the person of Professor M'Cullagh, who destroyed himself by cutting his throat with a razor. The fatal act was committed during a period of despondency, following on close application to study. The evidence of Dr. Stokes and of Mr. West, a barrister, proved that the mind was deranged, though not to such an extent as to have attracted the attention of a careless and indifferent observer.†

#### § V.—Sudden Death.

49. *Question of the Validity of a Contract*.—A case, remarkable for the difference of opinion expressed by the medical witnesses, occurred about a year since in France.‡ The investigation took place in consequence of the deceased having bought an annuity ten days before her death; which contract was attacked by parties interested in the matter, as the Code Civil declares that contracts become null and void, if made by persons affected with any illness which proves fatal within twenty days from the date of the contract.

The subject of the inquiry, a female, aged 73, had enjoyed good health until the month of May 1839, when some cutaneous disease developed itself on her right arm, where an issue had formerly been. The issue had dried up, and another was applied to the arm, which also cicatrized quickly. The cutaneous disease disappeared, and the deceased gradually became blind, thin, and weak. On the 16th August she went to church, ate some vegetables during the day, and talked in the evening with her neighbours. The next morning she was found dead in bed, as though asleep.

The questions proposed to the medical witnesses were—1st. Was the deceased suffering under any malady at the time she made the contract? 2d. If so, was the illness of which she died the termination of that with which she was affected at the time of the contract?

Five medical witnesses, consulted by the party who denied the validity of the contract, answered both questions in the affirmative, stating that death resulted from apoplexy, the natural consequences of her former illness. Seventeen medical men, on the other side, considered that the deceased was ill at the time of the contract being made, but that she, in all probability, died from an attack of apoplexy, which was independent of the primary affection. This being insufficient, MM. Récamier, Cayal, and Devergie were requested to state their opinions; which were to the effect that the deceased was suffering from illness at the time of the contract, and had been so for some time previously; and that, in reference to the second question, they were unanimous in considering her sudden and unexpected death as the consequence of the chronic malady with which she had been affected for the last three months.

The decision of the court is not stated in the periodical from which we have quoted. The case is given chiefly as an illustration of the difference of opinion prevailing among the large number of medical witnesses who were examined.

#### § VI.—Survivorship.

50. *Presumption of Survivorship*.§—On board the steamboat Pulaski, which perished at sea in the month of June, 1838, was Sylvanus Keith, his only child Caroline Coye, her husband George Coye, and their only issue Caroline Coye. Sylvanus Keith was about seventy, Mrs. Coye about thirty-three, her husband about thirty-seven, and their child about eight or nine years old. The judge of

\* Gaz. Méd. de Paris, 7 Novembre 1846, Gazette des Tribunaux, and Month. Jour. Med. Science, Jan. 1847.

† Dublin Medical Press, Nov. 10, 1847.

‡ Gazette Médicale de Paris, 24 Avril, 1847.

§ Coye v. Leach, Metcalf's Massachusetts Reports, in American Journal of Medical Sciences, Jan. 1847.

probate directed a distribution of the personal estate of Syllanus Keith to be made by his administrators among his nephews and nieces, as his heirs at law.

The administrator of the estate of George Coye, and the next of kin of the infant Caroline, being the brothers and sisters of George Coye, appealed against the decree of the judge of probate, as there was a possibility of the infant having survived her parents or grandfather, and if so, the former decree must be set aside.

Judge Dewey, of the Supreme Court of Massachusetts, delivered his opinion, to the effect that as there was no evidence to show which of the parties survived, the question must be settled on independent grounds. After mentioning the provisions of the civil law, according to which the daughter would be presumed to survive the father, and the child, if above the age of puberty, its parent, he went on to say: "But no such doctrine has any sanction in our system of jurisprudence, either as a principle of the common law, or as enacted by legislative authority. Under these circumstances, the court was of opinion that the weak age and strength of the child were less adapted to sustain her in the struggle for life than those of her mother or grandfather. As to these latter, as the greater age of the one was opposed by the weaker sex of the other, there was no presumption in favour of either." He then confirmed the former decree of the judge of probate, and placed the distribution of the estate in the hands of the administrators of Keith, to the exclusion of those who claimed as heirs of the infant Coye.

### § VII.—*Suffocation.*

#### 51. *Suffocation caused by Pressure on the Mouth and Nostrils, followed by Submersion.*

—The following case possesses some points of interest. On the 25th of June, 1847, the dead body of a young man was taken out of a well, into which, according to his father's account, he had thrown himself. Some doubt having been expressed as to the truth of this statement, the body was examined by the *juge de paix* and an *officier de santé*, who, on a superficial examination, finding on the body no marks of violence inflicted during life, came to the conclusion that the deceased had committed suicide. The body was accordingly buried; but fresh suspicions having been excited, it was ordered to be disinterred, and submitted for examination to Dr. Cisseville, who, in addition to several bruises on the extremities, which might have been occasioned by the fall of the body, or during its extraction from the water, discovered coagulated blood at the back of the head, a bruise immediately below the malleolar process of one of the lips, and an erosion on each *ala nasi*. On carefully inspecting the face, Dr. Cisseville found that the external surface of each nostril was the seat of an abrasion visible to the naked eye, and still more so by a lens. The injury on the right side was more strongly marked, and accompanied by a slight solution of continuity. These injuries were obviously not post-mortem changes, nor could they have been the effect of a fall; they could only be reasonably attributed to the pressure of the finger and thumb, the latter of which had occasioned the more severe injury, accompanied by a scratch of the nail on the right side. It was the opinion of the examiner that two persons had combined to destroy the deceased. Some hemorrhage had taken place from the nose. The air-passages contained no water or froth—a circumstance, in the examiner's opinion, favouring the supposition of death before submersion. The absence of cerebral congestion in a body taken from a well nearly 150 feet deep, confirmed the view taken by Dr. Cisseville, and adopted by the jury, that the deceased had been murdered by two accomplices in guilt, the father and uncle.\*

#### 52. *Suffocation by Pressure on the Mouth and Nostrils.—Burns inflicted after Death.*

—A second case, equally interesting with the foregoing, but where the objects surrounding the body were so disposed as to simulate death by burning, is recorded by Dr. Henri Bayard.† A female, named Dalke, 70 years of age, lived alone in a small apartment, attended by a woman who left her every evening. On the 22d of December, 1846, she was found dead in her bed, the window-curtains drawn, and the shutters closed. There was neither fire nor smoke in the room, but a very disagreeable odour. The deceased lay on an iron bedstead, the mat-

\* Gaz. Méd. 4 Septembre, 1847.

† Annales d'Hygiène Publique et de Médecine Légale, Jan. 1848, p. 141.



tress, pillows, and bedclothes undisturbed, and the body in a position which proved that she had made no attempt to get out of bed. She lay on her back, with her head on the uppermost of two pillows, the legs close together, directed towards the side of the bed, and the knees bent. The arms lay close to the sides, the right hand, with the fingers flexed, placed upon the chest, the left hand, also contracted, was raised towards the face. The upper surface of the mattress, at the head of the bed, was burnt, as was also the upper side of the pillows; the wool of the upper mattress was burnt to a cinder, while that of the lower one was scarcely touched. The sheets were burnt on the left side of the bed.

It was, at first, supposed that the deceased had been accidentally suffocated by the smoke arising from the burning of the mattress. The remains of a match, half consumed, were found near the bed; and to this the burning was attributed. Drs. Bayard and Coqueret were required to make an examination of the body, and to report upon the case. The examination of the body was made about fifty hours after death; it was in a perfect state of preservation, and still rigid. The body was covered with a cotton shift and flannel waistcoat, of which the sleeves and the left side of the body were burnt. The hair, the eyelashes, and eyelids had escaped, as also the skin of the face; the left arm, forearm, and hands were covered with burns, exhibiting dry vesications slightly raised above the surface. The edges of the burns were pale. From the left clavicle to the hip, the sides of the chest and abdomen were also the seat of burns with pale borders, and vesicles containing no serum. The upper eyelid of the left eye was ecchymosed, and blood was effused along the whole of the lower edge. There was also a slight bruise at the inner angle of the eye. On the left cheek there were three parallel linear excoriations, extending obliquely from within to without, and from above to below, separated from each other the third of an inch English; the upper excoriation was half an inch long, the second and third about three quarters of an inch. In form and appearance these excoriations resembled the scratches of a nail; at the level of the third excoriation the skin had the appearance of parchment, to the extent of three quarters of an inch; a little below, it was turned yellow by the smoke. The tongue was protruded between the teeth; the lips bruised: the mucous membrane abraded transversely; the edge of the right nostril and of the septum of the nose were also bruised, and presented, by their violet tint, a striking contrast to the parchment-like appearance of the skin in the situation of the burns. On cutting into these parts, it was clear that these appearances were due to an infiltration of blood into the cellular tissue. The down and hairs covering the upper lip, the opening of the nostrils, and the chin, were neither burnt nor singed. There was no trace of violence or of burns on other parts of the body. There was no bruise or wound upon the head, no fracture of the bones, no mark of injury on the neck or chest. The internal appearances were as follows:—*Brain*. Great congestion of the membranes of the brain, and of its substance, which presented numerous bloody points; but there was no hemorrhage into the substance or ventricles of the brain.—*Lungs*. Internal surface of the trachea of a reddish-brown colour; the tube filled, in common with the bronchia, with a fine white froth, stained with blood; the tissue of the lungs was gorged with liquid blood, and there were effusions of blood under the pleura. The *heart* contained very fluid blood. The *stomach* was distended by food partly digested. From the appearance of the food, the examiners estimated the time which had elapsed from the taking of food to the death at one hour at least, and three hours at the most. Neither the stomach nor intestines presented any trace of disease.

The examiners, as the result of their inspection of the body and bedding, and a careful consideration of all the circumstances of the case, arrived at the following conclusions:—1st. That the death of the widow Dalke was caused by asphyxia. 2d. That the bruises observed upon the lips, nostrils, and left eye, and the excoriations upon the left cheek, led to the conclusion that the asphyxia was by suffocation, produced by the pressure of the hand upon the mouth and nostrils. 3d. That the burns were inflicted after death.

The disappearance of the greater part of the valuables of the deceased confirmed the presumption that a crime had been committed. Six parties were accused; of whom two were condemned for the murder, and two others as accomplices in the theft.

The confession of the chief criminal confirmed the justice of the conclusions drawn by the medical examiners. According to this confession, the deceased was surprised in bed, and stifled by the hand; and the bed was set on fire, in order to encourage the belief in an accidental fire, and to efface the traces of the murder, committed two hours after the supper of the deceased.

#### § VIII — Wounds.

53. *Wounds from Firearms without Ball.*—Dr. Paul Swift, of Philadelphia,\* has made an acceptable contribution to our medico legal knowledge of this species of wound. His experiments were made with a view to the evidence he was called upon to give in relation to the following case:—William Simler, a minor, fired a pistol, charged with powder only, at Robert W. Pitt. Pitt staggered into the arms of his friends, crying out, "I am shot." Simler, thinking him frightened, but not hurt, said, laughing, "It was not loaded; it had no ball in it." A wound was inflicted on the fleshy part of the left hip, above and behind the trochanter major, about one inch in diameter and four inches in depth; the integuments were destroyed, and the muscles presented a mangled, blackened mass: it bled but little. The lad went on well till the sixth day, when tetanus came on, and proved fatal on the seventh day. In the wound, after death, a minute fragment of woollen cloth was found about two inches from the surface, and the wound was blackened through its whole extent with grains of gunpowder. The wound was four times as large as that which the ball of the pistol would have caused. At the inquest there was much discrepancy in the testimony as to the distance at which the pistol had been held from the wound; the patient himself had expressed his belief that the pistol "almost touched him," while the witnesses differed from one foot to two or three yards. This difference is accounted for by the circumstance that the pistol was fired at night, in a place badly lighted, and in a moving throng of some twenty persons.

The following are the results of experiments made by Dr. Swift, and used at the trial, on an emaciated male subject, about thirty-five years of age, which had been preserved by corrosive sublimate, whereby the tissues were much hardened. The pistol, which was the same used by Simler, had a bore of about four inches long, and half an inch diameter. It was wadded with paper, and had an ordinary charge.

Experiment 1. Fired twelve inches from fleshy part of hip, covered with one thickness of broad-cloth, and a twilled cotton cloth. Clothes torn, and skin abraded. Wadding on the floor on fire.—Ex. 2. Distance six inches. Part covered as before. Clothes torn, wadding lodged one inch and a half below the surface. Ex. 3. Part covered as before. Distance two inches. Wound ragged, blackened with powder, and penetrating, one and a half or two inches, to the bone. Wadding immediately beneath the integuments, and somewhat on one side of the principal wound.—Ex. 4. Distance one and a half inch from the ribs of the right side. No covering of cloth. Wound penetrated the cavity of the chest, the wadding passing between the ribs through the intercostals.—Ex. 5. Distance one inch and a half. No covering of cloth. The integuments removed, wadding penetrated the chest, carrying away a portion of the rib.

—The duel which proved fatal to M. Dujarrier, and which in some of its circumstances reminds us of a late trial in England, has given rise to some questions, which M. Boutigny, the chemist, was required to investigate. A party present at the duel stated that on inserting his finger into the barrel of the pistol with which the fatal shot was fired, it was blackened, and it was alleged in defence, that this might have happened by the firing of a percussion-cap, with or without a charge of powder, with a view to try the pistol. M. Boutigny proves, experimentally, that after the firing of a percussion-cap, or even of ten percussion-caps in succession, the finger inserted into the mouth of the pistol is neither blackened nor stained; that the firing of an ordinary priming slightly soils, but does not blacken the finger; but that on firing a charge of powder, with or without ball, the finger

\* Huston's Medical Examiner, March 1847.

is blackened, and the more so if the firing is repeated.\* Some other questions of less interest are also examined.

54. *Lacerated Wounds of the Internal Viscera.*—One of the most revolting cases on record will be found in a recent number of the "*Annales d'Hygiène*,"† with some valuable comments on the subject of *Plaies par Arrachement*, from the pen of Dr. Ambrose Tardieu. The husband of a poor woman, who had already several times caused her to miscarry, brought his crimes to a climax by forcibly rupturing the uterus, and tearing away a large portion of the small intestines. It appeared in evidence that she survived this severe injury about three quarters of an hour, which was regarded as so improbable, that Dr. Tardieu, with Professors Orfila and Cloquet, were requested to report upon the case. It appears that the female had sustained the following injuries:—A rupture of the upper part of the vagina and of the uterus, nearly four English inches in length; a loss of a portion of the substance of the womb; several rents in the peritoneum, large enough to allow the hand to pass into the cavity of the abdomen; the loss of the whole of the small intestine, with the exception of nineteen English inches at the pyloric extremity, and about three inches at the lower extremity; and the removal of a considerable proportion of the mesentery. From the torn appearance of the several parts, it was clear that the injury had been caused by some blunt instrument. The cavity of the abdomen contained a considerable quantity of blood. Dr. Tardieu, in discussing the question submitted to the reporters, illustrates it by citing several cases bearing more or less closely upon it, such as severe injuries of the brain consistent with long survivorship; a case observed by himself, in which a man survived a severe wound of the heart a quarter of an hour, and spoke up to the last moment; and a second case which came under his own observation, where an individual, who had received a wound which traversed the lungs, heart, and stomach, through and through, was able to descend a ladder, remount a second, and gain his room before he lost his consciousness. He then goes on to quote the familiar instances of insane suicides, who have wounded themselves several times in the abdomen, opened its cavity, drawn out the intestines, and mutilated them, without being interrupted by pain or immediately arrested by death; the case recorded by Professor Paul Dubois, of an apothecary, who, in a furious access of delirium, opened his abdomen and removed a portion of the mesentery, from which injury he recovered; another case, on the authority of Devergie, of rupture of the diaphragm, spleen, and small intestine, in the person of a carman, who afterwards completed a long journey, and survived eighteen hours; the well-known long survival of the horses eviscerated in the Spanish bull-fights; and the severe injuries received during delivery, and not immediately or necessarily fatal. The paper concludes with a recital of five facts, bearing more closely on the case referred to by the author. The first was a case of forcible removal of the uterus, occupying three quarters of an hour, and fatal within a few minutes of its completion; the second was a similar case, followed by death in two hours; the third, also of the same kind, terminated fatally in half an hour, the efforts at removal having lasted one hour and a half; the fourth combined rupture of the uterus with that of the intestines, the efforts at removal lasted two hours, and the death happened at the end of another hour; the fifth case was one of inversion of the uterus, with rupture of the vagina and peritoneum; hemorrhage and death in seven hours. From the facts which he has collected, and the consideration he has given to the subject, Dr. Tardieu concludes that death, after the forcible removal of the uterus and a portion of the intestines, is not necessarily immediate, that it is not accompanied by excessive hemorrhage, nor even by complete fainting.

55. *Wound of the Heart—Death after 78 hours.*—The following case is narrated by Dr. Alexander, of Charlestown, U.S.‡

The deceased, whilst engaged in a scuffle, received a blow on his back, which arrested his attention; he turned and pursued the man who struck him, but another man followed him, who, while in the rear, and on the left side of the deceased, was seen to strike him with his left hand, in which was an open knife. The deceased immediately put his hands to his side, and, exclaiming "I am a dead

\* *Annales d'Hygiène*, Avril 1848, p. 392.

† Janvier 1848, p. 157.

‡ *American Journal of Medical Sciences*, January 1847.



man," staggered a few steps and fell; there was but little external hemorrhage. He was taken to a neighbouring house, and died 78 hours after the infliction of the wound. On inspecting the body after death, two wounds were found upon the left side of the chest, one below the clavicle and over the second rib, which had arrested the instrument: this wound was seven-eighths of an inch long, but of trivial importance. The other wound was over the fifth rib, three-fourths of an inch from its junction with its cartilage; it was surrounded by a livid circle of considerable extent. Upon examining it with a probe, an indentation of the rib was perceptible, and upon opening the chest, the left cavity was found filled with bloody serum. There were also signs of acute inflammation of the pleura. The rib itself was severed, and the intercostal artery divided. This wound was found also to have entered the chest and pericardium obliquely, and to have passed entirely through the heart, about half an inch from its apex, opening and traversing the left ventricle, and wounding the diaphragm. There were a few ounces of bloody serum in the pericardium.

The instrument used in inflicting the wound was the large blade of a coarse pocket-knife, not more than two inches and a half in length.

56. *Death from a Wound in the Neck and Abdomen, and two Wounds at the wrist, dividing the radial and ulnar arteries.*—The following is narrated with many other interesting cases in the "Revue retrospective des Cas judiciaires dans l'Arrondissement de Metz."\*

The body of a man, from 25 to 30 years of age, was found dead in a wood. The state of the body was such as to lead the magistrate of the department to order MM. Isnard and Dieu to make a careful examination. From the condition of the body they concluded that the man had been dead from 10 to 12 days. They found on the anterior part of the neck a transverse wound, situated beneath the thyroid cartilage, the edges being smooth, as though made with a sharp instrument. The angles of the wound indicated that it had been made from left to right. It divided the skin, superficial fascia, cervical fascia, and some of the fibres of the sternomastoid muscle, but the jugular veins and carotid arteries on both sides were untouched. On the forearm of both sides, above the radio-carpal articulation, was seen a wound, which divided many of the flexor tendons, as well as the radial and ulnar arteries and veins; the wound of the right forearm was more contused, and the arteries on that side more completely divided than on the left. A superficial wound was also found on the abdomen, between the umbilicus and pubes, along the median line.

The clothes found on the person of the deceased did not present any cuts corresponding to any of the wounds, but many spots of blood were seen on them. A large knife, the blade of which was covered with spots of rust and blood, was found covered up in a pocket-handkerchief, and placed in one of his trousers pockets.

Were these wounds the cause of death? This question was answered in the affirmative, as the wounds of the radial and ulnar arteries were sufficient to cause death. Were they the result of suicide? From a careful examination of the case, this question was also answered by the examiners in the affirmative. The wound was from left to right, and was made apparently at one time or cut, circumstances almost invariably constant in cases of suicide (?). But had the deceased inflicted the wounds on his own forearms? Had there been but one wound, this would have been easily answered, but it was difficult to account for both. Nevertheless, as the flexor tendons were unequally divided on the two sides, it was thought possible that, after having inflicted the greater wound on the left arm, he then repeated the wound on the other arm; which view was borne out by the fact that there was more contusion on the right forearm than on the left, as if that wound had been inflicted by a weaker and more tremulous hand. The order of the wounds would then seem to be as follows; first, he made the wound on his neck; that failing to kill him, he inflicted the wound in his abdomen; and finally, the wounds in his arms, in the order mentioned.

57. *Can a Blow on the Head by the Fist cause Death?*—Dr. Wharrie has published† a few cases illustrative of the fact that fatal results may follow severe blows on

\* Gazette Médicale de Paris, No. 1, Janvier 1848.

† Med. Gaz. July 30, 1847.

the head by the fist. In the greater number of cases of this kind, it will be found that death has resulted not from fracture or depression of the cranium, but from the rupture of some vessel within the skull, and the consequent effusion of blood on the brain. It should also be borne in mind, that the blow is often complicated by a fall, which may be the immediate cause of mischief, by producing fracture of the cranium. The following cases are related by Dr. Wharrie:

CASE I. Two carters quarrelled, and one struck the other a blow with his fist behind the ear, after which the latter fell down and expired directly. The body was inspected 24 hours after death, and the only mark of violence seen externally was a small scratch behind the left ear, from which a little blood had exuded.—Upon removing the skullcap, there was a considerable extravasation of blood, extending over the surface of the brain, and entering between the convolutions. A small quantity was observed also in the ventricles, and at the base of the brain. The prisoner was tried for culpable homicide, to which he pleaded guilty, and was sentenced to three months' imprisonment.

CASE II. A collier, when off work, quarrelled with a stranger, who was passing; blows ensued, one of which knocked him down, and he was carried home dead. Upon examining the body, Dr. Wharrie found the skin slightly scratched on the right cheek-bone, the nose, the tip of the right shoulder, and over the left collar-bone: there was also a very slight wound on the scalp, over the left ear. On opening the cranium, all the vessels were found turgid, and in each lateral ventricle was a quantity of effused blood; and extravasation had also taken place at the base of the brain, from rupture of the lateral sinus; the rest of the body was healthy.

CASE III. A person, returning home at about ten o'clock at night with his wife and another female, was met in the street by a drunken man, who being insolent, was immediately knocked down by a blow with the fist over the nose. Dr. Wharrie was sent for, and found the man alive, but supported in a sitting posture, with his nose bleeding. There was also a small bruise over the occiput, and the man was faint and insensible, which state was in part attributed to his drunkenness.—He was taken home in a carriage, and died within 24 hours after the receipt of the injury.

At the post-mortem, a small contused wound was found extending about half an inch down the centre of the nose, but the nasal bones were uninjured; the skin round the eyes was discoloured, and the nostrils stained with blood. Towards the left side of the occiput, a small contused wound was discovered, and beneath the scalp, at this part there was a quantity of extravasated blood. There was a fissure of the occipital bone (corresponding to the extravasation beneath the scalp) which extended four inches upwards from near the base of the skull, and was crossed about the middle by another, running towards the left temporal bone, with a small fissure lower down, nearer the foramen magnum, but there was no depression. At the site of these injuries, beneath the dura mater, there was an ounce of extravasated blood, as well as also on the right hemisphere (especially opposite the temple and ear), where the quantity was much larger. The opinion given in this case was, that the deceased had received a blow on the nose, which occasioned a severe fall on the back of the head, causing fracture of the occipital bone, and extravasation beneath.

The slight character of the external marks in all these cases, especially in the first two, is worthy of note. In cases of this kind, the medical witness should not forget the possibility of an internal fracture from violence applied externally.

58. *Attempt to Murder by pouring Melted Lead into the Ear.*—A case, interesting for the experiments to which it gave rise, is narrated in the "*Annales d'Hygiène*,"\* where this novel method of murder was attempted.

The mother of an idiot poured into his ear some melted lead while he was asleep. The patient recovered; but the mother was put upon her trial, during which the following medico-legal questions were asked of the medical witnesses: Can melted tin or lead, poured into the ear, cause death? if so, why has it failed to do so in the present case? The following answers were made from experiments instituted on the dead body.

Tin, heated only to the fusion point, does not destroy the membrana tympani; but heated to a higher degree, the membrane is completely destroyed, and the metal enters the mastoid cells, and the bony canals which open at the base of the cranium. Hence the medical witnesses concluded that melted metal, heated to a high temperature, by entering the cranium, would cause death sooner or later. The reason why death did not result in the present case might, however, be due to the low temperature of the metal, the presence of cerumen, or to the struggles of the patient.

M. Boys de Loury, however, has repeated these experiments, but with different results. He ascertained that, in the dead body, hot fluid metal did not readily enter the ear at all, because of the resistance offered by the air in the cavity of the meatus; and that, when it was made so to enter, on no occasion did it enter the mastoid cells, or reach the dura mater; and that, though it might cause severe pain, it was not likely to cause death.

59. *Method of Recognising Spots of Blood on the Clothes.*—A new method, proposed by M. Piria,\* depends on the property that fibrin possesses, of attaching itself to the texture of the clothes, and on the action of sulphuric acid on articles made of hemp or linen. The suspected texture is to be plunged into concentrated sulphuric acid, which dissolves out all the vegetable tissue, and leaves the fibrin forming a network, in which may be distinguished the impressions made by the texture on which the blood was fixed.

#### § IX.—*Death by Starvation.*

60. The post-mortem appearances in two cases of death from this cause, will be found narrated in "The Dublin Medical Press," March 17, 1847. The subjects were a man and woman who had died suddenly. The features of the female were contracted, the nose prominent, and the cheeks drawn in. The body was emaciated in every part; the spaces between the metacarpal bones were hollowed out, and all the internal organs completely anæmic. The fat normally present in the abdominal parietes was absent. The rugæ of the stomach were well developed, and that organ, as well as the whole of the intestinal canal, completely empty. The gall-bladder, as usual, was full of bile, and there was some ulceration of the intestinal glands at the lower part of the ileum. Both lungs were anæmic and emphysematous, and the left ventricle contained half an ounce of thin fluid blood.

The body of the male presented similar appearances. In both cases, the bladder was empty.

#### § X.—*Spontaneous Human Combustion.*

61. The "Gazette Médicale"† quotes from the "Union Médicale" the following case of alleged spontaneous combustion. On the morning of the 6th of January, 1847, the body of a man named Ch—— was found on fire in bed. A dense smoke filled the room. One who was present affirmed that he saw on the body of the deceased, a small, lambent, whitish flame. All the bedclothes and clothes of the deceased were almost entirely destroyed. The bedstead was only partly burnt; there were no ashes, and very little vegetable charcoal, but some portions of animal charcoal having evidently belonged to the articulations. The other materials surrounding the body were scorched. It is said that M. C—— carried in his waistcoat pocket some chemical matches, and in the evening he had, as usual, placed at his feet a heated brick, which, before being wrapped in linen, had been slowly cooled by water thrown over it twice. He went to his room between six and seven o'clock in the evening. Two hours later, his son and daughter-in-law, passing his door, perceived nothing unusual; and it was not till the next morning, that his grandson found him in the state which we have described. He was 71 years of age, and was neither very fat, nor given to drunkenness. The weather had been very cold for some time, but there were no signs of an excess of atmospheric electricity. The body was found in its usual position during sleep.

\* Journal de Chimie Médicale, Mars, 1848.

† 4 Septembre, 1847.



His son and daughter were suspected of having first murdered him, and then burnt the body, in order to conceal all traces of the crime. Dr. Masson, who was ordered by the authorities to make the necessary examination, had the body exhumed. The coffin was found half filled. The body was folded in a white shroud. A cravat, nearly destroyed by the fire, and a fragment of a shirt collar, remained round the neck. The hands, burnt to a cinder, were attached to the forearm merely by some carbonized tendons, which gave way at the least touch. Lastly, the thighs were so completely separated, that, had it not been for fragments of animal charcoal, the separation might have been attributed to a knife.

From the examination of these facts, it was concluded that, as it was impossible to attribute the phenomena to the action of the combustibles with which the body had been in contact, they must be ascribed to a cause inherent in the individual, put in action, perhaps, by the heat of the brick applied to the feet, but which must have found a fuel in the tissues which it destroyed; that, in a word, it must be classed among cases of spontaneous combustion. This opinion of M. Masson being fully confirmed by that of M. Orfila, the accused were acquitted.

### § XI.—*Doubtful Sex.*

62. In the American journals will be found narrated two cases of doubtful sex, one by Dr. Barry, the other by Dr. Harris. From the general external characters observed in Dr. Barry's case, he was led to consider the party as belonging to the male sex. This opinion was founded on the presence of a penis, a scrotum, and one testicle, with a spermatic cord; but in the perineum, at the root of the corpora cavernosa, was an opening large enough to admit an ordinary-sized catheter. At a subsequent examination, it was found that the party menstruated regularly through this opening, which was found to lead to a passage similar to a vagina, and through this opening the urine also was voided. The mammæ and nipples were well developed, and the character and propensities evinced were feminine. The examination took place in order to ascertain whether the party had a right to vote as a male citizen or not. For more particular details the reader is referred to the paper itself.

Dr. Harris's case resembled the foregoing in the preponderance of the female characters, and in the regular occurrence of menstruation, but it would appear that the discharge took place through the urethra of a stunted penis, "naturally formed in every respect." An imperforate fissure occupied the position of the vagina.\*

### § XII.—*Medico-legal Trials and Inquests.*

63. *Death from Fever, simulating Death from Opium.*—An inquest was held August 8th, 1848, at Putney, on the body of Sophia Dallett, at the urgent request of Dr. Cormack, her medical attendant. The particulars, a full account of which the reader will find in the journals of the time, are succinctly as follows. She was taken ill with vomiting and shivering on the 4th of July, for which she took some antibilious pills, and after that, medicine supplied by Mr. Farmer, of Putney. On the 6th, Dr. Cormack saw her, and found her suffering under symptoms resembling those of fever, attended with violent vomiting and diarrhœa, and complete depression, with contracted pupils. Sedative medicine, and the creosote mixture, were then prescribed; but, on his return, the abdominal pain, which had been present from the first, had considerably increased, and the diarrhœa and vomiting still continued; for these he applied a stimulating and sedative liniment, and prescribed wine. The symptoms, under this treatment, improved for a short time, but were soon succeeded by a state of complete prostration and drowsiness, similar to that induced by opium. Thinking it possible that the symptoms, then present, might have been caused by the opium given (but which had been prescribed in small and guarded doses), he endeavoured to rouse her by mustard cataplasms applied to the feet, &c. Two medical men, who were called in at this time, agreed in the

\* American Journal of Medical Sciences, July 1847. Dr. Barry's case was originally reported in the New York Journal of Medicine, Jan. 1847.

judiciousness of the treatment adopted, and endeavoured to excite vomiting by the exhibition of the sulphate of zinc. In spite of all remedies, she died 24 hours after Dr. Cormack was called in. After death, evidence of great congestion of the brain and its membrane was found, as also of well-marked inflammation of the small intestines. Peyer's and Brunner's glands were much enlarged, and the mucous membrane in the lower part of the small intestines thickened, and in parts ulcerated. The jury exonerated Dr. Cormack from any charge of having adopted improper treatment.

64. *Culpable Homicide*.—Thomas Gibson was tried on the Glasgow circuit, for culpable homicide, in having caused the death of Charles Forrest, by forcibly throwing him on the ground, and twisting and tightening his neckcloth so that he died from the effects of the injury so received.

From the evidence it appeared, that on the night of the occurrence, Forrest was gossiping at the house of a neighbour, when, hearing a loud knocking at the next house, he ran out, and he and his neighbour's daughter pursued a man who was seen running away. Upon coming up with him, Forrest insisted upon seeing his face, when Gibson, the stranger, seized the deceased by the neckcloth, and threw him against a pile of straw, and appeared to be choking him. Others arriving at this time, endeavoured to take Gibson off, but without success, and at last both he and Forrest fell down together. Upon Forrest rising, he complained of feeling sick, and looked very pale, and after a time became drowsy, and died the following day. From the medical evidence it appeared that there was congestion of the lungs and brain, with extravasation of blood on both hemispheres. Between the hemispheres there were three osseous deposits. There was no alcoholic smell in the stomach. Dr. Sellar, of Edinburgh, considered death as due solely to the violence, as also did Dr. MacLagan, while Dr. King, of Glasgow, ascribed the death to apoplexy, and would not have anticipated a fatal result had the membranes been in a healthy state. The jury found the prisoner guilty of culpable homicide, but recommended him to mercy.\*

65. *Charge of Poisoning by Arsenic—Acquittal*.—Elizabeth Johnson was indicted for poisoning her husband by arsenic. It was given in evidence that as soon as he was first taken ill, she pronounced that he would not recover, and told all her neighbours so. Although the surgeon said at one of his visits that he was better, she said that he would die the same night—a prophecy which was literally fulfilled. She, moreover, had bought some arsenic the day before her husband was taken ill, though she denied that she even knew what arsenic was. The deceased died with all the symptoms of irritant poisoning. There were found signs of inflammation in the stomach and œsophagus, but the reactions by Reinsch's test were not satisfactory at the first examination, which took place the day after the death. Three months afterwards the body was exhumed, and the chemical examination readily detected arsenic. The prisoner was acquitted, owing to the conflicting evidence of the medical witnesses.†

66. *Death from Sulphuretted Hydrogen*.—An inquest was held before Mr. Bedford, August 7th, 1847, to inquire into the death of George Goss, who was supposed to have died from the inhalation of this gas, the extrication of which had been due to the state of drainage in the neighbourhood of Long Acre. From the evidence it appeared that the deceased, a strong healthy man, was seen to go into a water-closet on the 6th instant, and that about a quarter of an hour afterwards a struggling was heard, and the man was found dead. His features were ghastly, and there was a "tremendous" stench in the yard which had not been noticed before. From other portions of the evidence it appeared, that the drains of the court where he lived were nearly choked up, and that upon the morning of the catastrophe a quantity of impure sulphuric acid had been thrown into the sewer, which gave rise to the immediate extrication of sulphuretted hydrogen. The medical evidence attributed the death solely to this cause, and a verdict was recorded accordingly.‡

\* Monthly Journal of Med. Science, June 1847.

† Ibid. Aug. 1847; from "Times" newspaper.

‡ Pharm. Times, August 21, 1847.

## Supplementary Reports.

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### I. A REPORT ON THE RECENT PROGRESS OF PSYCHOLOGICAL MEDICINE.

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IN the following report our aim has been to present a view of the recent improvements and suggestions made in the department of Psychological Medicine.

This being the first Report on this department of medicine which has been made in the "Half-yearly Abstract," we have thought it advisable to devote a section (§ I) to the consideration of the forms of insanity, the which have been, and still are, variously classified. The simplest of the recent divisions of the subject is that contained in the Report of the Metropolitan Commissioners in Lunacy (1844), and is, therefore, the one which we have adopted throughout this Report.

Otherwise, the only rule we have followed has been to sift all the recent writings on the subject, and rejecting false theories and common-place remarks, to present our readers with a summary of the recent adaptations of scientific research to the cure and alleviation of mental disease.

We would take this opportunity of drawing their attention to a recently established periodical, "The Journal of Psychological Medicine and Mental Pathology,"\* "a journal devoted exclusively to the consideration of the human mind in its abnormal state." We have received the first two numbers, which, in our opinion, reflect much credit on Dr. Winslow (the editor) and his coadjutors. The individual articles are, generally speaking, of considerable value in a scientific point of view, and have been written with much care.

We trust, however, in future numbers, to see more regard had to the recent writings on this department of medicine contained in the contemporaries of the "Psychological Journal," viz., the American, French, and German journals of insanity. But as the Editor, with justice, observes in the second number, "our readers will undoubtedly make every allowance for the deficiencies perceptible in the early numbers of the 'Journal of Psychological Medicine;' the difficulties inseparably associated with the first attempt made in this country to establish a periodical of this kind have been great."

#### § 1.—Forms of Insanity.

In the Report of the Metropolitan Commissioners in Lunacy, the various forms of mental disease are thus ably distinguished into—

- I. Mania; which is divided into—
  - a. Acute mania, or raving madness.
  - b. Ordinary mania, or chronic madness of a less acute form.
  - c. Periodical or remittent mania, with comparatively lucid intervals.
- II. Dementia, or decay and obliteration of the intellectual faculties.
- III. Melancholia,
- IV. Monomania,
- V. Moral Insanity,

} These three forms are sometimes comprehended under the term partial insanity.

\* No. 1, January 1848; to be continued quarterly.



## VI. Congenital Idiocy.

## VII. Congenital Imbecility.

## VIII. General Paralysis of the Insane.

## IX. Epilepsy.

A description of the disorders to which these terms are appropriated is likewise given, of which the following is the substance:

1. *Mania*.—This term is used to designate a particular kind of madness, as affecting all the operations of the mind; hence its synonyme, total or general insanity. Maniacs are incapable of carrying on, in a calm and collected manner, any process of thought; their disorder for the most part betraying itself whenever they attempt to enter into conversation. It likewise affects their conduct, gesture, and behaviour, which are absurd and irrational; their actions being characterized by great restlessness, appearing to be the result of momentary impulses, and without obvious motives. Mania is likewise accompanied by hurry and confusion of ideas, and by more or less excitement and vehemence of feeling and expression. When these last symptoms exist in an excessive degree, the disorder is termed—

*Acute mania*, which is the first stage of the disease, and often tends to a fatal termination, through the exhaustion occasioned by perpetual agitation and want of rest. It is also generally attended with considerable disturbance of the vital functions. The symptoms gradually abate, and the disease passes into—

*Chronic mania*, which is attended with less excitement of the passions, less rapidity of utterance, and less violence of action. In this stage the disorder of the mind is not always immediately perceptible; but it soon becomes apparent that the patient is incapable of continued rational conversation or self-control, and that his acts are the result of momentary caprice, and not governed by rational motives. A great proportion of maniacs labour under illusions or hallucinations, or false impressions as to matters of fact; but in these illusive notions there is no consistence or permanence. Patients labouring under this chronic form of mania are often tolerably tranquil and harmless, and capable of being employed in agricultural and other pursuits.

*Intermittent mania* (the third subdivision of mania) is a variety the existence of which has been much disputed, some medical writers of note denying the existence of lucid intervals altogether. As the Commissioners justly observe, the fact appears to be, that there are patients subject to occasional paroxysms of raving madness, but who have intervals of comparative tranquillity and rest. It generally happens, however, that after the alternations of raving fits and periods of tranquillity have continued for some time, the intervals become less clearly marked, and the mind is found to be weakened, the temper more irritable, and both the feelings and the intellectual faculties more and more disordered.

2. *Dementia*.—Chronic and protracted mania is frequently the prelude to a decay and final obliteration of the mental faculties, which is termed dementia. In some few instances (generally the result of causes of a depressing nature, as sudden grief, &c.) dementia is the primary form of mental derangement. In those instances in which dementia is the sequel of protracted mania, it is not easy to determine the point at which mania ends and dementia begins. It differs from idiocy, in which the powers of the mind have never been developed, while in dementia they have been lost.

These two forms, mania and dementia, are the prevailing varieties of insanity in most large asylums, constituting, on the average, two-thirds of the cases.

3. *Melancholia*.—Of this disease there are several degrees and varieties. Some patients display merely lowness of spirits, with a distaste for the pleasures of life, and a total indifference to its concerns. These have no disorder of the understanding, or defect in the intellectual powers; and, however closely examined, manifest no delusion or hallucination.

Another class of melancholics derive their grief and despondency from some unreal misfortune which they imagine to have befallen them. Many are convinced that they have committed unpardonable sins, and are doomed to eternal perdition. Others believe themselves to be accused and suspected of some heinous crime, of which they are destined to undergo the punishment; and of this they live in continual dread, &c. &c.

All cases of melancholia have more or less a tendency to suicide.

4. *Monomania*.—This term is given to cases in which the intellectual faculties are unimpaired, except with relation to some particular topic. A frequent illusion of monomaniacs is that they hold conversation with supernatural beings.

5. *Moral Insanity*.—This term is used to designate a form of mental disease in which the affections, sentiments, and habits, and, generally speaking, the moral feelings of the mind, rather than the intellectual faculties, are in an unsound and disordered state. Cases of this description were formerly looked upon as unaccountable phenomena. They are, however, now regarded as a distinct form of mental disorder in nearly all the public asylums. They are characterized by a total want of self-control, with an inordinate propensity to excesses of various kinds.

6. *Congenital Idiocy and Congenital Imbecility*.—Congenital idiots are persons whose intellectual faculties have never been developed. Congenital imbecility is the result of some original defect which renders the mind feeble in all its operations, though not altogether incapable of exercising them within a limited sphere.

7. *General Paralysis of the Insane*.—This is a species of monomania in which the individual affected fancies himself possessed of vast riches and power, and which is always attended with a general paralysis, distinguished at its onset by an impediment in the articulation, and gradually progressing to total obliteration of the power of locomotion, with inability to attend to the calls of nature, &c. This specific form of insanity was first pointed out by French physicians.

8. *Epilepsy*.—This disease exists complicated in various ways with defects or disorders of the mind; with imbecility; with dementia; with mania; or it may coexist with perfect soundness of mind.

## § II.—On the Present State of Lunacy, and of Lunatic Asylums.

In an official document lately presented to both Houses of Parliament, by command of her Majesty, entitled "Further Report of the Commissioners in Lunacy to the Lord Chancellor," much valuable information regarding the condition, &c., of the insane, is to be found. Indeed, the whole Report reflects the highest credit on the present Lunacy Commission. We proceed to make some extracts from the second part of that Report on the present state of lunacy and of lunatic asylums.

9. *Number of Insane Persons in England and Wales*.—"There are in England and Wales alone, according even to the returns, more than 23,000 persons of unsound mind. These returns, however, are notoriously imperfect, falling far short of the actual amount; and they do not, moreover, embrace the whole of a numerous class who are termed imbecile persons, having been so from birth, or become so from senility."

10. *Proportion of Higher and Middle Classes, and of Paupers*.—"Of the 23,000 persons before referred to, nearly 5000 belong to the higher and middle classes of society; and about 18,800 are paupers." About 15,000 of these are confined in the various hospitals, county asylums, and licensed houses; the others being in poor-law unions, or in private houses.

11. *Aggregate Number of Insane, and Persons engaged in their care*.—"The aggregate number of the insane and imbecile, together with their various committees, visitors, medical officers, attendants, and servants, cannot be fairly estimated at less than 30,000 persons."\*

12. *Estimate of Annual Amount expended in the Maintenance, &c., of Lunatics*.—"On a rough estimate, it may be stated that the aggregate amount of money expended every year for the maintenance of lunatic patients, or administered on

\* According to a late report on the District Local and Private Lunatic Asylums in Ireland (p. 72), the total number of insane persons in that country (including wandering idiots and epileptics), amounts to 12,397; and the number of lunatic poor in Scotland, according to a late return, is 3413. Add to these the private patients in each country, and the various medical and other officers, attendants, &c., and the result will be that, *exclusive* of the families of lunatics, the total number in Great Britain and Ireland, who are directly or indirectly involved in the subject of lunacy, will be little short of *fifty thousand persons*.

their behalf, exceeds £750,000. To this amount must be added the expense of maintaining many families cast upon the parish by the parent's insanity, the expense of supporting many persons termed imbecile, and the interest of the large sums invested in the public lunatic establishments (some of which are paying interest on borrowed money)—which, together, will raise the expenditure to little less than *one million annually*.”

The question of lunacy, therefore, is manifestly one of considerable extent, and, independently of its bearing upon the general liberty and welfare of the subject, of great public importance.

13. *Control and Jurisdiction exercised over the Question*.—“The expense incurred on behalf of pauper lunatics is intrusted to the justices of counties and parish authorities: the due application of the private property of the insane is subject to the especial jurisdiction of the Lord Chancellor.

“On the other hand, to ascertain that the patient is duly confined; that he has medical aid, fit attendance, and proper comforts during his confinement; that he is provided with employment and amusement; that his food is good, and his place of residence healthy, clean, well ventilated, and in good order; that he himself is not ill-treated, neglected, or improperly restrained; and, finally, that he is liberated when fit for liberation—are amongst the duties imposed upon the various visitors, and, concurrently with them, upon her Majesty's Commissioners in Lunacy. These various duties are regulated by two Acts of Parliament (8 & 9 Vict., c. 100; and 8 & 9 Vict., c. 126); the one being for regulating the care and treatment of lunatics generally, and the other being for the provision and regulation of lunatic asylums for counties and boroughs, and the maintenance and care of pauper lunatics therein.”

14. *Former Condition of Asylums for the Insane*.—“The enormities existing in asylums, public as well as private, previously to the parliamentary investigations of 1815, 1816, and 1827, can scarcely be exaggerated. They comprise almost every species of cruelty, insult, and neglect, to which helpless and friendless people can be exposed when abandoned to the charge of ignorant, idle, and ferocious keepers, acting without conscience or control.”

Although, however, these investigations have been productive of good, the metropolitan licensed houses were found, in 1828, by the commissioners appointed under Act 9 Geo. IV, c. 41, to have been defective in almost every important particular. The apartments of the pauper patients were dirty, ill-ventilated, and altogether wanting in comfort. Personal restraint prevailed to a great and inexcusable degree. The number of attendants was, in almost every instance, inadequate to the proper care and control of the patients, &c. &c.

Even in 1844, when, by the Act 5 & 6 Vict., c. 87, the metropolitan commissioners were enabled to inspect the condition of the various public and private asylums throughout England and Wales, they reveal, in their published Report,\* a state of things existing in the private licensed houses, both in the metropolis and in the provinces, over which humanity would fain draw a veil; while the condition of several public institutions was but slightly better, that at Haverfordwest, belonging to the county of Pembroke, as bad.

Taste and want of space alike induce us to refer those interested in such chronicles of cruelty to the official Report in question.

15. *Present Condition of Asylums for the Insane*.—“Important benefits and comforts of various sorts have been obtained for the insane by the present system of inspection and supervision; and the amount of improvement which has of late years taken place in lunatic establishments have, her Majesty's Commissioners report, been great and general.” “The dwellings for the insane are no longer the gloomy prisons in which they were formerly confined. Cleanliness, warmth, and ventilation are insisted upon; better diet, clothing, and bedding have been provided; personal restraint is diminished, and even where still employed, its severity is greatly mitigated, and its application strictly watched; the health and mental condition of the lunatic are more carefully considered; occupation and amusement are more generally afforded to him; and in all respects better treatment is

\* Report of the Metropolitan Commissioners in Lunacy to the Lord Chancellor. Presented to both Houses of Parliament by command of Her Majesty. London, 1844.



secured; whilst an opportunity is periodically given to him of representing any hard-ship to which he may have been subjected—an advantage which, as is found by experience, many patients fully appreciate.”

Such a picture, and drawn, too, by those officially intrusted with the supervision of such establishments, forms a pleasing contrast to the view we above had of the former conditions of asylums for the insane.

### § III.—Statistics.

16. *Results of Treatment in Hospitals for the Insane.*—The statistics of insanity have recently been carefully and ably investigated by Dr. Thurnam.\* “The results of treatment,” he says, “which it is the principal object of statistical reports of hospitals for the insane to enable us to compare, are two in number—the proportion of recoveries per cent. of the admissions, and the mean annual mortality per cent. resident.† With the important proviso, indeed, of circumstances being otherwise similar, the efficacy and success of these institutions may be regarded as in a direct ratio with the proportion of recoveries, and in an inverse one with the rate of mortality.” As, however, in order to ascertain the precise proportion of recoveries in any particular asylum, the numbers “admitted” must be the same as those “discharged” when the period in question is completed—a method of observation which evidently cannot be attained—it follows that although the plan of calculating the recoveries upon the admissions, affords a near approximation to the truth, “yet it does not exhibit with precise accuracy the results of treatment in any hospital for the insane.” On the other hand, the rate of mortality, when calculated on the average population of an asylum, not being able to any such objection, “constitutes, for this and other reasons, our most important statistical means for estimating the success in treatment and the character of hospitals for the insane.”‡

“The indiscriminating comparison of the aggregate results, however,” as Dr. Thurnam well points out, “is nearly always very fallacious,” yet it is particularly so when these apply to short periods, and especially when such periods are the first in the history of the institutions to which they refer. Indeed, upon a particular investigation of the statistics of a large number of hospitals for the insane, it appears that the proportion of the recoveries, in nearly every instance, has gone on materially increasing for a considerable period, often amounting to 30 or even 40 years from their first establishment; while, on the other hand, the mortality is generally more favourable during the early history of an asylum, continuing during the first 20 or even 30 years of its operations, to undergo a material increase which often amounts to 50 or 100 per cent. upon the mortality of the first 5 years. *A period therefore of the lowest, from 20 to 30 years, must elapse before we are authorised in concluding that the experience of an hospital for the insane at all fairly represents the average results of treatment which either have been, or will be, obtained in it.*

In the following table, which is compiled from two furnished by Dr. Thurnam (Op. cit. pp. 20, 22), we have exhibited the comparative results of treatment in several of the principal hospitals for the insane at 20 years respectively from the

\* Observations and Essays on the Statistics of Insanity. Simpkin, Marshall and Co., London.

† Our limits forbid us following Dr. Thurnam in his consideration of the important sources of error connected with the terms used to designate the results of treatment, and with the methods of calculating the numerical value of such results. We here assume that, in asylums for the insane, the proportion of recoveries ought to be calculated on the admissions, the rate of mortality on the mean numbers resident, referring those of our readers engaged in such researches to the first four sections of the first chapter of Dr. Thurnam’s “Statistics,” and which are well worthy of a careful perusal.

‡ Although “the only STRICTLY accurate and unequivocal test of the sanitary state of any population, as established by its mortality, is obtained by a comparison of the deaths at each age, with the average numbers living at the same ages;” yet, as regards asylums for the insane, “it is probable that the difference in the numbers living at different ages, will rarely be so great as to render the inferences, from a comparison of the mean annual mortality at all ages, erroneous in any very material degree.”—(Dr. Thurnam, op. cit. p. 16.)

dates of their establishment, the proportion of recoveries being calculated on the admissions, the mortality on the mean population.

Name of Asylum.	Number of years from date of establishment.	Proportion of recoveries per cent. of admissions.	Mean Annual Mortality.	
			At the end of twenty years.	During the ten years 1835-45.*
Lancaster . . .	20 years	38.56	18.25	14.94
Nottingham . . .	20 years	41.87	7.37	8.28
York, West Riding	20 years	43.56	16.57	14.54
Lincoln . . . .	20 years	39.7	13.44	13.33
Retreat, York . .	20 years	46.01	3.71	5.24
Dundee . . . .	20 years	44.21	5.84	6.05
Glasgow . . . .	20 years	42.72	8.31	10.02
McLean Asylum } Boston, U.S. }	20 years	41.93	11.41	not given.

17. *Circumstances in the Character of the Cases admitted influencing the Results of Treatment.*—Admitted in any given case that the proportion of the recoveries and the rate of mortality be correctly calculated, there still can be no doubt, as Dr. Thurnam observes, “that the considerable discrepancy which is so often to be observed in the aggregate results of treatment in different asylums as frequently, or perhaps still more often, depends upon a difference in the previous circumstances and character of the cases admitted, than upon any differences there may be in the various influences and methods of treatment to which they have been subjected in the institutions themselves, and thus, in order to any fair comparison of the recoveries and mortality, we require considerable information as to these several particulars.”

The following are the more important of these circumstances, though in the arrangement of these we deviate from Dr. Thurnam’s method.

*a. Duration of the disorder.*—Of all the circumstances which affect the comparison of the recoveries and mortality of the insane, the stage or duration of the disorder is, practically speaking, the most important. Dr. Thurnam states that, at the Retreat, the probability of recovery in cases brought under care within three months of the first attack, has been found to be as 4 to 1, whilst in cases not admitted until more than twelve months after the attack, the probability of recovery is less than as 1 to 4.

The duration of the disorder likewise exerts a material influence upon the mortality, as well as upon the proportion of recoveries. This influence is, however, of an opposite character, the rate of the mortality being greater in the recent and less in the chronic cases. Thus, during 48 years at the Retreat, the mean annual mortality has been 7.3 per cent. in cases admitted within three months of the first attack, and only 4.57 per cent. in those admitted of more than twelve months’ standing.

The following table exhibits the proportion of recoveries per cent. on the admissions, and the mean annual mortality in cases of recent and longer duration when admitted at the Retreat, 1796-1844.†

\* In this column we have given the mean annual mortality for the ten years 1835-45, which Dr. Conolly, in the Appendix to his work on the Construction, &c., of Asylums (noticed in § IV.), has adopted, without any qualification, as the standard of his statistical comparison of all public hospitals in Great Britain, both of recent and of longer duration, a method which would lead those unacquainted with the statistics of insanity to draw most unfair conclusions as to the comparative success of many of these institutions.

† Thurnam, p. 56.

Duration of disorder when admitted.	Proportion of recoveries per cent of admissions.			Mean annual mortality per cent. resident.		
	Male.	Female.	Mean.	Male.	Female.	Mean.
First attack, and within three months . . . . .	79.24	77.19	78.18	8.05	6.76	7.3
First attack above three and within 12 months . . . .	46.15	43.75	45.	5.14	4.06	4.37
Cases of 12 months' duration and upwards . . . . .	14.65	23.38	19.16	5.24	3.93	4.57

*b. Sex.*—That the probability of recovery is greater in women than in men may now be regarded as established. Dr. Thurnam states, that in the Asylum, at Glasgow, taking the entire period of its operation, the recoveries in women have exceeded those in men by 4 per cent.; at Belfast by 5; at Lancaster by 7; at Armagh by 10; at the Retreat by 20, &c. A still greater difference, in the rate of mortality of the two sexes, is nearly always to be noted. As it is well known, there is an excess of 5 or 6 per cent. in the general mortality of this country on the side of males, but the relative difference is enormously greater in the insane. The excess of the mortality on the side of the males amounted to 72 per cent. at Hanwell; to 57 per cent. at Glasgow; to 56 per cent. at Lancaster; to 34 per cent. at the Retreat, &c.

It is, therefore, obvious that, in institutions receiving a decided preponderance of men, the aggregate results, both as respects the recoveries and the mortality, will, *ceteris paribus*, be less favourable than in such as have an excess of women.

*c. Age.*—Age exerts a very decided influence, both on the proportion of the recoveries and the mortality of the insane. As will appear from the following table, the probability of recovery is greatest in the young, and undergoes a very regular diminution as age advances.

Ages.	10—20	20—30	30—40	40—50	50—60	60—70	70—80	80—90	All ages.
Proportion of recoveries at the Retreat, 1796—1840	55.5	53.5	50.	47.5	44.8	35.6	20.	25.	47.3
Proportion of recoveries at the Asylum, York, 1814—40 . . . . .	52.8	37.6	28.8	31.4	27.5	22.4	18.2		33.9

On the other hand, the mortality of the insane increases in proportion to the age much more rapidly than is the case in the general population. The following table exhibits the mean annual mortality at different ages.

Ages.	20—30	30—40	40—50	50—60	60—70	70—80	80—90	90—97	All ages.
Mean annual mortality at the Retreat, 1796—1840	3.6	2.8	3.4	4.5	6.3	8.6	22.1	17.5	4.7
Mean annual mortality at the Asylum, York, 1814—40 . . . . .	4.8	6.8	9.4	6.4	6.9	12.1	30.		7.4

*d. Rank and Previous Habits.*—A very material influence is, doubtless, exerted by the rank in life and other external circumstances of the persons to whom asylums are appropriated, upon the average results of treatment, though in particular perhaps upon the mean annual mortality. Thus Dr. Thurnam states, that the proportion of recoveries at the Retreat, in those connected with the Society of Friends, has been at the rate of about 50 per cent., and the mean mortality only 4.7; whilst at the Wakefield asylum, which may be taken as a fair representation



of an English county asylum receiving paupers only, the recoveries have been 43·6 per cent., the mortality 15·7 per cent. on the population.

These, together with one or two minor points, as the duration of residence, form of disorder, &c., constitute the circumstances in the character and prior condition of the cases brought under treatment, which, as Dr. Thurnam has the merit of showing in his treatise, "may more or less materially influence the proportion of recoveries and the mortality in hospitals for the insane; so that these results may vary materially from the average standard without reflecting any discredit on these institutions. Still there can be no doubt, and it would be a libel on these institutions to assert otherwise, that the management and treatment of the various influences, moral and physical, to which the insane are subjected in hospitals appropriated to their reception, do exert a material influence on the results which are obtained. And although we shall never be able to ascertain the exact numerical value which for good or for evil is to be attached to the observance, neglect or perversion of the various particulars of such treatment in any given institution, we may yet be able to form some general notions on these points, which may approximate to truth, and which may furnish us with useful hints in forming our conclusions."\*

18. *Influence of Insanity on the Duration of Life.*—The influence of insanity on the duration of life, is a subject on which authors have long been divided, and the opinion that mental alienation is not necessarily prejudicial to life is not even yet exploded. The researches of Dr. Thurnam, however, prove that insanity does materially shorten the duration of life. Of the total deaths which occurred in the Retreat from 1796–1840, "in those connected with the Society of Friends, less than two-thirds, and in the others not more than one-third of the expectation of life at the time of the attack was on an average realized." For further remarks on this subject, the reader must be referred to the work itself. (Part II., p. 100.)

19. *Causes of Death in the Insane.*—In the subjoined table, Dr. Thurnam draws a comparison of the several classes of diseases proving fatal at the Retreat (near York), with those which proved fatal through the whole of England and Wales, in the year 1838. The results furnished by this table are of great interest.

Causes of Death.†	England and Wales, 1838.	The Retreat, 1796–1840.
1. Epidemic, endemic, and contagious diseases . . .	20.538	8.633
2. Diseases of the nervous system . . .	15.016	19.424
Including <i>convulsions</i> , (chiefly infants) . . .	7.879	
<i>apoplexy</i> . . . . .	1.703	11.510
<i>paralysis</i> . . . . .	1.505	1.438
<i>epilepsy</i> . . . . .	.330	4.316
<i>disease of brain</i> . . . . .	.425	2.158
3. Diseases of the respiratory organs . . .	27.484	24.460
Including <i>inflammation of the lungs</i> . . .	5.445	4.346
<i>consumption</i> . . . . .	17.613	14.388
4. Diseases of the heart, &c. . . . .	1.075	6.402
5. " " digestive organs . . . . .	5.387	14.388
6. " " kidneys, &c. . . . .	.493	.719
7. " " uterus, &c. . . . .	1.007	.719
8. " " bones, &c. . . . .	.635	
9. " " skin, &c. . . . .	.126	
10. " " uncertain or variable seat . . .	13.389	13.669
11. Old age . . . . .	10.781	7.913
12. Death by violence . . . . .	3.617	3.597
Including <i>suicide</i> . . . . .	.320	3.597

\* It is almost superfluous to state that the three tables in the last page are adopted from Dr. Thurnam's treatise on the statistics, &c., chap. i. In a second chapter Dr. Thurnam traces, *seriatim*, the probable influence on the results which the several items of which the treatment of the insane consists may exert. Our limits forbid us entering into this part of the subject.

† This table is read thus: of every 100 deaths in England and Wales during the year 1838, 20.538 died of epidemic, endemic, and contagious diseases, while of every 100 deaths at the Retreat, from 1796–1840, only 8.633 died of the same diseases, &c. &c.

20. *Liability to Relapse or Recurrence.*—This is a question often put to the medical practitioner, and one which statistics alone will enable him correctly to answer. Dr. Thurnam concludes his calculations and inferences on this subject (which are of much interest and value) with this remark: "The liability to a relapse or recurrence of insanity after a recovery from a first attack, all things considered, can scarcely be estimated as at all less than 50 per cent., or as one in every two cases discharged recovered. . . . In round numbers (according to the experience of the Retreat), of ten persons attacked by insanity, five recover, and five die sooner or later during the attack. Of the five who recover, not more than two remain well during the rest of their lives; the other three sustain subsequent attacks, during which at least two of them die.\* But, although the picture is thus an unfavourable one, it is very far from justifying the popular prejudice, that insanity is virtually an incurable disease; and the view which it presents is much modified by the long intervals which often occur between the attacks, during which intervals of mental health (in many cases of from 10 to 20 years' duration) the individual has lived in all the enjoyments of social life."

21. *Relative Liability of the Sexes to Insanity.*—This question has been minutely analysed by Dr. Thurnam. "The proportion of men," he states, "admitted into asylums for the insane is, on the average, 13.7 per cent. higher than that of women, and as we know that the proportion of men in the general population, particularly at those ages when insanity most usually occurs, is decidedly less than that of women, we can have no grounds for doubting that the male sex is actually more liable to disorders of the mind than the female."

22. *Liability to Insanity at different Ages.*—"From 30 to 40 years the liability to insanity is usually the greatest, and it decreases with each succeeding decennial period; the decrease being gradual from 30 to 60 years, and after that much more rapid."†

#### § IV.—On the Construction and Government of Lunatic Asylums.

At a period like the present, when nearly every county in England is building, about to build, or enlarging the asylum for their insane poor, and as after the 8th of August, 1848, it becomes obligatory by Act of Parliament (8 and 9 Viet., c. 126) on "all counties and boroughs, having no asylum, to erect or provide an asylum for the pauper lunatics of such county or borough;" the principles on which these buildings should be constructed, as likewise the form of their government, become matters of great moment. A recent publication by Dr. Conolly on the subject,‡ must be regarded by all interested in the question as a most valuable addition to our knowledge on these matters. We shall therefore endeavour to present our readers with a summary of his views and suggestions.

23. *Advantages of a County Asylum for the Insane Poor.*—"The insane poor are of necessity exposed in both such places (viz., in private licensed houses, or small asylums, or lunatic wards attached to workhouses), to innumerable disadvantages, only to be avoided in larger public asylums. Their diet, their clothing, their lodging are all generally of the most wretched description: the means of occu-

\* According to the experience of the Siegburg Asylum for 20 years (1825-45), of 125 cases which, during that period, were discharged cured, and who have subsequently died, 68 continued of sound mind during the remainder of their lives; 57 died insane; or, in round numbers, of every 11 cases of insanity which were there cured, six continued well throughout life; five died insane (the result of one or more relapses). This stands in the proportion of three remaining well to two and a half dying insane, and is, therefore, a more favourable view than that furnished by the experience of the Retreat.—Aerztlicher Bericht über die Wirksamkeit der Heil-Anstalt zu Siegburg, erstattet im December 1847. Kocln 1847.

† These conclusions as to the liability to insanity of the two sexes, and at different ages, vary materially from those very generally adopted. Dr. Thurnam enters into the subject at considerable length to prove, as we think he does satisfactorily, that the opposite conclusions on these questions are really to be attributed, not so much to any error in the data on which they have been founded, as to the application of faulty methods of statistical analysis to these data.

‡ The Construction and Government of Lunatic Asylums and Hospitals for the Insane, by John Conolly, M.D., &c., pp. 183. London, 1847.

pation are very limited; space for exercise is wanting; means of recreation and amusement are unthought of or unknown, and security is only effected by confining the limbs of the violent or troublesome, or by buildings so contrived as almost to shut out light and air, and utterly to exclude cheerfulness. All these circumstances are manifestly unfavourable to the recovery, or even to the amendment of those thus confined; and whilst there is not any foundation for the assertion that the number of cures, in curable or recent cases, is greater in private licensed houses for paupers than in public asylums, the mortality in such houses has been shown far to exceed that of the public institutions."

24. *Greater Economy of Public County Asylums.*—"As regards the question of expense, also, it appears that when once a county asylum is built and opened, the patients are maintained in it at less cost than in private licensed houses; the average charge per head in the licensed houses being 8s. 11½d., and the average cost in county asylums, 7s. 6½d.; which in an asylum for 300 patients, would constitute a considerable annual saving to the ratepayers of the county. How much better the pauper lunatic is taken care of in any well-conducted county asylum is easily to be ascertained by inspection.

25. *General Remarks on the Construction of an Asylum.*—"It is particularly necessary to observe that almost every desirable quality, both in the construction and government of an asylum, becomes more difficult to be obtained or preserved, when the size of the asylum is greater than is required for 350 or 400 patients." Next, "no part of the building ought to consist of more than two stories." As to form, "there is none so convenient as one in which the main part of the building is in one line; the kitchen, laundry, workshops, and various offices being arranged behind these central buildings. In this main line wings of moderate extent may be added at right angles, in each direction, in which case the building assumes what is called the H form." Farther, "we require that the building should be on a healthy site, freely admitting light and air, and drainage. Space should be allowed for summer and winter exercise, for various employments, and for all the purposes of domestic economy. Warmth must be provided for during the winter, light for the winter evenings, coolness and shade in the summer. Separate wards and bedrooms for the tranquil, for the sick, for the helpless, for the noisy, the unruly or violent, and the dirty; a supply of water so copious, and a drainage so complete, that the baths, water-closets, and building in general, may always be kept perfectly clean, and free from bad odours. There should be workshops, and workrooms, and schoolrooms, separate from the wards, and cheerfully situated; a chapel conveniently accessible from both sides of the asylum; as also a kitchen, a laundry, a bakehouse, a brewhouse, and rooms for stores, and all the requisites for gardening and farming; and also a surgery, and all that is necessary for the medical staff. All these are indispensable in every large public asylum." Lastly, as regards the external aspect of an asylum, the following remark is of much practical value:—"When it is remembered that many patients are sent to an asylum whose senses are as perfect, and whose feelings are as acute as those of sane people, and that from the moment they enter the outer gate, everything becomes remedial with them, or the reverse, the reason will at once be seen why the external aspect of an asylum should be more cheerful than imposing, more resembling a well-built hospital, than a place of seclusion or imprisonment. It should be surrounded by gardens, or a farm. . . . The reception-room should be a cheerful and neatly furnished sitting-room."

26. *Galleries, Dormitories, Sleeping-rooms.*—"A public asylum is ordinarily a series of galleries, out of which almost all the bedrooms open on one side, whilst on the other, large windows and doors open on the airing grounds and gardens. The galleries should be spacious, doors wide. A width of twelve feet and a height of eleven, seem to be suitable for the galleries of a county asylum. They should be light and cheerful; several small tables and chairs should be placed between the windows; the windows should be low and large, affording a view of pleasant courts and shrubberies.

"Every one who has any personal experience of sickness and bad nights, must know how sleep is conciliated or repelled by the temperature, the tranquillity, and even the general aspect of the bedroom, and the appearance or quality of the bedding and bedclothes. These feelings must be remembered, when we have to



make night and day arrangements for nervous and insane persons accustomed to the comforts of life, and there is no necessity for forgetting them even in an asylum for the poorest lunatics."

Much difference of opinion exists as to the comparative value of dormitories and single bedrooms. We greatly prefer the latter, and entirely concur with Dr. Conolly in his remark, "that in favour of large dormitories I do not know one good reason that can be advanced. Those who sleep in them are generally discontented. One patient accidentally noisy, disturbs the repose of fourteen or fifteen; and out of that number there is often some one noisy. . . . The violent patients *must, of course*, be in single rooms, and if dirty patients are herded together at night, a dormitory becomes perfectly disgusting; and as for the clean and orderly, and tranquil and convalescent patients, no complaint is so constantly on their lips, as that which arises from their not having a single room, and consequently not having a single moment to themselves, or any place where they can be quiet, or, in their frequently uttered words, where they can even say their prayers without interruption. I would therefore have, at least, two-thirds of the bedrooms single rooms, very few and small dormitories, and no large dormitories for any class of patients."

In a second chapter, Dr. Conolly considers in detail, *the various arrangements of galleries and sleeping-rooms*, into which, however, our limits forbid us following him, as also into the necessary arrangements for *airing courts and grounds*, which are considered in a portion of the third chapter.

27. *Employments and Recreations without and within Doors*.—"Among the means of relieving patients from the monotony of an asylum, and of preserving the bodily health, and at the same time of improving the condition of the mind, and promoting recovery, employment of some kind or other ranks the highest. Its regulation is proportionably important. The spirit in which it is conducted should be conformable to the general spirit of the asylum, and its abuse should be carefully guarded against. . . . The regulation of the employment of the patients is the regulation of a highly important remedy, and should never be attempted without the physician's assistance. As regards county asylums, there is now a great disposition in the officers to set every patient to work as soon as admitted; sometimes very improperly so, when perhaps work has made the poor creature mad. In many cases of recent mania and melancholia, work is positively detrimental to the patient; and in chronic cases, it is sometimes much objected to, and becomes on that account useless, if not hurtful.

"Constant and regular work cannot properly be exacted from insane persons, and they should not be kept at work so many hours as sane persons. Those patients who are employed in the workshops, laundries, bakehouses, &c., should be induced occasionally to walk round the field or gardens. In general, there is no want of a disposition to be occupied in those capable of exertion, and many patients are wretched if not allowed to work. To stigmatise as indolence what is the mere result of a malady which immediately reduces the nervous energy, and is often the beginning of paralysis, is an error into which no medical man would fall, and from which his opinion ought to protect any of his patients. There are some who are really indolent, but few of them who may not be in some way or other encouraged to some kind of occupation."

With regard to *recreation*, Dr. Conolly's remarks are likewise of much practical value. "In devising out-of-door recreation, it is necessary to avoid such as would endanger heedless patients, or be capable of being turned to mischievous purposes. Swings, see-saws, &c., are on these accounts scarcely to be recommended. The large rocking-horses to be seen in all our airing-courts at Hanwell, are free from all objection. Five or six patients can safely ride upon them at once, or one patient can be amused by them; the free exercise they afford relieves the excited, and the gentle motion which single patients, sitting in the seat at their ends, can enjoy, often soothes them to sleep. Means of amusement out of doors are useful to the attendants as well as to the patients; they contribute to relieve the irksomeness of their duties, and act as inducements to their taking the patients out as often as they can."

"Within doors similar care should be extended to providing recreation for the patients during the winter days and evenings. Each ward in which the patients

are generally tranquil, should be provided with books, journals, magazines,\* illustrated papers, pictures, albums, bagatelle and draught-boards, dominoes, cards, puzzles, soft balls, and even some descriptions of playthings; and the supply of these means of amusement should be carefully kept up. If music is encouraged among the patients, kind people will be found to furnish instruments which could not properly be bought for a county asylum. Some of the attendants are tolerable musicians, and a small band has been formed which contributes much to the enjoyment of the winter evening parties. The female patients often have small parties, for dancing, and there are some entertainments on a larger scale, which have often been described. For these there ought to be a large apartment in every asylum, which might be otherwise useful also. In ordering these entertainments, the object should always be to produce gratification to the patients, without hurtful excitement. This is admirably effected in the evening entertainments, and as much forgotten in the extremely objectionable publicity of what are called fancy fairs, which ostentatious amusements, however well fitted to the idle and frivolous who are at large, are quite inconsistent with the character of an asylum for those suffering from mental disorder."†

28. *Clothing*.—"Among the most constant indications of insanity are to be observed negligence, or peculiarity as to dress.

"As regards the clothing of the pauper lunatic in a country asylum, it is especially desirable that it should be warm both in the winter and in the changeable weather of the autumn and spring, and cool and unirritating in the summer. Many of the insane also are predisposed to pulmonary consumption, and a flannel waistcoat or drawers are indispensable to them, as well as to those who become depressed and inactive in severe weather.

"When convalescence is commencing, the patient generally becomes more cheerful, if some assistance is given as regards the Sunday dress, and of this a neat or even a pretty cap, is an important part.

"Many private asylums are open to the charge of great neglect as respects the dress of patients of the classes far above pauperism. The rule should be in private asylums, that each gentleman should be encouraged to dress according to his station, and ladies should not be allowed to forget that they are ladies. Their friends are sometimes more in fault than they, and the patients are disfigured against their will; but it is disadvantageous to them to be thus permitted to fall into a negligence characteristic of advanced and incurable forms of disorder."

On the *government of asylums*, and on the *appointment and various duties of the attendants* of different classes, we can, in a Report like the present, only refer in terms of commendation to the 5th, 6th, and part of the 7th chapters of Dr. Conolly's treatise, the whole of which merits the most careful perusal by all in any way associated either as commissioners, visitors, medical officers, &c., with such institutions.

29. *Diet*.—"It is ordained that man should be capable of associating enjoyments with the mere partaking of food, which communicate satisfaction to the mind; and where the object is the restoration of mental tranquillity, attention to the diet, its preparation and serving, rank among remedial measures, acting on the mind as well as on the body. All habitual physical discomfort is opposed to mental recovery, and a scanty, ill-cooked, unwholesome diet, creates a chronic uneasiness and dissatisfaction, impairs the health, and increases the mortality of an asylum."

The diet of the insane ought to be liberal, and, except where contraindicated

\* "At the suggestion of Her Majesty's Commissioners in Lunacy, we have caused three of the patients, schoolmasters, to amuse the others in the winter evenings by reading selected passages aloud; and the practice has been attended with the happiest effect."—Report of the Dunstan Lodge Lunatic Asylum (the asylum for the united counties of Cumberland and Westmoreland) for the year ending January 1, 1848, p. 8.

† These principles, thus ably laid down by Dr. Conolly, may be found variously illustrated in detail in many of the Reports of asylums for the insane. Of those which have reached us, we would specify, as being well worthy of notice, the Reports which for the last eight years have been published by Dr. Browne, of the Crichton Royal Institution for Lunatics at Dumfries; the Fiftieth Report of the Friends' Retreat near York; the Reports of the Dunstan Lodge Lunatic Asylum for 1846 and 7; the Reports of the Surrey Lunatic Asylum, 1843 to 6; The Report by Dr. Skae, of the Royal Edinburgh Asylum, for 1847, &c. &c.

(as in recent mania, &c). of a more stimulating character than that of the population at large. A daily allowance of meat and porter is, in our opinion, indispensable. The dietaries of the county lunatic asylums, much though they have of late years improved, still err on the side of deficiency rather than of excess. Of those which have reached us, we would particularise the diet tables of the Suffolk County Asylum, as requiring amendment.—(Tenth Annual Report of the Suffolk Lunatic Asylum, p. 26, December 1847.)

30. *Religious Services and Instruction*.—"Into places of abode where words of kindness were once never heard, ministers of a religion of mercy have penetrated, and to those to whom tones of reproach or violent menace were once alone familiar, spiritual consolation has been successfully addressed, and lessons of instruction have been afforded with advantage."

"There can be no doubt," continues Dr. Conolly, and the observation embodies our views of the general extent to which the services of the church can be rendered available in the treatment of the insane, "that the arrangements made in an asylum for the observance of Sunday, may be such as to assist the general plan of a physician, whose endeavours are understood to be directed to curing his patients by tranquilizing the excited, and soliciting such faculties as are disordered or oppressed to ancient and customary exercise."\*

*Instruction*, i. e. mental exercise, is *beginning* to occupy the place it ought to do in the treatment of mental disease. Dr. Browne, of Dumfries, has done more than any one with whom we are acquainted, in carrying into practice an intellectual treatment of intellectual disorders. It has been well observed by him,† that "while self-analysis is destructive, while the contemplation of one idea or class of ideas is itself disease, and while the cultivation of the feelings tends to exaltation of sentiment, excitement, and extravagance, the operations of the intellect are discursive, and induce the application of the faculties to matters external to the mind, or foreign to its sources of disquietude, and incompatible with perturbation or uneasiness."

We would earnestly direct the attention of those of our readers engaged in the treatment of the insane, to the illustrations of the manner in which he carries out these views contained in the Report we have just quoted from, as also in the monthly notes of the "New Moon," a periodical written entirely by his patients, and most interesting to the psychological student.‡

#### § V.—*Restraint*.

Unconnected with all the improvements which we have been considering, stands the subject of restraint. On the one hand, Dr. Conolly most strenuously opposes its employment in any shape or form;§ on the other, Dr. Thurnam, and those connected with the Retreat, as also Dr. Browne, Sir Alex. Morison,|| &c. &c., while equally condemning the cruelties which formerly were practised on the

\* Did Dr. Conolly's subordinates but imitate his moderation, the following remark would never have been put in type. "Were we to take an equal number of sane persons, from the same rank of life, with characters and habits such as those of the generality of persons brought to this asylum, I do not think we should find a greater portion of them likely savingly to receive the truths of religion than is actually met with among my afflicted charge. And this is very remarkable," &c. &c. (which, if true, it certainly would be).—*County of Middlesex Pauper Lunatic Asylum. The Chaplain's Report, presented to the Committee of Visitors, January 12th, 1848.*

† Seventh Annual Report of the Crichton Royal Institution, &c. p. 26. 1846.

‡ "PERIODICAL. In resuscitating correct and healthy habits of thinking, in developing powers hitherto unknown or lost in the confusion consequent upon disease, and in giving a sphere of activity to minds which are only partially impaired, the 'New Moon' has proved most beneficial. As a pecuniary speculation, it has been fortunate. The proceeds have been scrupulously applied to enlarge the happiness of those by whom they are created. Allowances have been granted to patients on their discharge from the asylum; even public charities have assisted."—Report, 1847. Such an undertaking deserves the patronage of all interested in psychological medicine.

§ See the various Reports of the Middlesex Lunatic Asylum; Clinical Lectures, &c.; *Lancet*, 1845-6; *Construction, &c., of Lunatic Asylums. Appendix.*

|| Dr. Thurnam, *Statistics, &c.; Reports of the Retreat, Dumfries and Surrey Lunatic Asylums, &c. &c.*



insane, and while freely admitting that the use of restraint requires the most careful medical supervision, and is as unfit an agent to intrust to superintendents or other servants as ever opium would be, still assert that instances of furious or suicidal mania do occur from time to time in which the employment of mechanical restraint is attended with less injurious effects than are the struggles which, without such means of prevention, do occur between the attendants and their patients: struggles sometimes terminating fatally.\*

In this latter view we concur, and have recently placed our opinion on record,† and so likewise do her Majesty's Commissioners in Lunacy. We cannot better elucidate our views on this subject than by quoting the following passage from the Fiftieth Report of the Retreat, containing as it does the well-sifted experience of half a century.

"It would be a very great and dangerous mistake to suppose that the measure of real liberty and comfort prevailing in hospitals for the insane, is at once to be estimated by their having entirely abandoned or otherwise the use of mechanical restraint. Those who are acquainted with the interior economy of these establishments must know how rare it is to meet with attendants who really possess the admirable power of moral suasion: we fear also it must be admitted that brute force is the means by which, in one form or another, a large majority of mankind seek to accomplish their purposes in their intercourse with the weak; and it cannot be conceded that the exclusion of straps and strait-waistcoats necessarily banishes every form in which that vulgar power can be exercised. Few indeed are the cases, if there be any, which can be said to be entirely without the range of moral influence, or to be wholly unaffected by the manner in which whatever is required to be done, is accomplished; but there doubtless are cases in which full liberty of action cannot be allowed with safety to the patient or to others: cases of violence, which no charm of thought, or eye, or voice, or manner, can sufficiently control, and to which physical power in one form or another must be temporarily applied. The question is not between moral suasion and vulgar force, but between different modes of outward constraint; and there are certainly other means than ligatures for the prevention of dangerous action by which the unhappy maniac may be at least equally tormented and degraded. . . . There can be no doubt, however, after the satisfactory experiments which have been made, that the use of mechanical restraint should be considered as a serious deviation from the general practice of management, and that it should not be resorted to but on extraordinary emergencies, and under the personal inspection, if possible, of the (*medical*) superintendent of the establishment."

The editor of the "*Medico-Chirurgical Review*"‡ likewise expresses himself in favour of a modified system of restraint.

Mr. Labatt has recently published an essay§ on the use of restraint, which is, however, but confusedly written, and throws no new light upon the subject.

That distinguished veteran psychologist Jacobi has lately asserted the occasional necessity of mechanical restraint in the treatment of insanity.||

#### § VI.—*Diagnosis.*

Delirium tremens, hysteria, and phrenitis may, and have been, mistaken for insanity. Dr. Steward, in a recent work, has some excellent remarks on this subject.¶

31. *Delirium Tremens*.—"The disease," he says, "most likely to be confounded

\* See Report on the inquest of John Cottingham, "*Times*," Oct. 25, 1847, quoted in the Appendix to the Report of the Dunstan Lodge Lunatic Asylum, 1847.

† See letter to the Editor of the *Times*, Oct. 15, 1847, quoted in the Report of the Dunstan Lodge (Cumberland and Westmoreland) Lunatic Asylum, 1847.

‡ The *Medico-Chirurgical Review*, No. 89, July 1846, Art. IV.

§ An Essay on the Use and Abuse of Restraint in the Management of the Insane, &c., with copious notes, pp. 76. Dublin, 1847.

|| Ueber die gänzliche Beseitigung körperl. Beschränkungsmitel, &c.; von M. Jacobi. — *Allgemeine Zeitschrift für Psychiatrie*. Erster Band, Viertes Heft.

¶ Practical Notes on Insanity, by John Burdett Steward, M. D., pp. 122. London, 1845. These notes are the production of a thoroughly practical man, and contain in a short space much valuable matter.

with insanity is delirium tremens; but the bustling, agitated manner, the intense expression of anxiety, generally about matters of business, the unequal enunciation, the tremulous tongue, the shaking frame, supported by the fact of the attack having succeeded a fit of hard drinking, are ample for the purpose of right judgment."

32. *Hysteria*.—"Hysteria, in some of its forms, resembles insanity. There are, indeed, some cases of hysteria which present little or nothing of the hysterical character, and yet are purely so; and in these cases the diagnosis is not so easy as we might wish, considering the nature of the responsibility. In the absence of the hysterical paroxysm—which, in difficult cases, we may wait for hours without witnessing—the symptoms which best mark the distinction between hysteria and mania are the variableness and incongruity of the symptoms in hysteria; the peculiar coating of the tongue—something like the silver paper covering a macaroon when cracked; the low muttering delirium; the closed eyes: the peculiar subdued and hardly visible smile, sometimes observed creeping, as it were, over the countenance; above all, tranquil sleep, succeeding generally about the evening. These distinctions might be sufficient, but there is one other more certain than any, but which experience alone can appreciate, and that is the general appearance of the patient. Chorea could only deceive the ignorant and inexperienced."

33. *Phrenitis*.—"Insanity may be distinguished from the delirium of phrenitis by the absence of fever in the former, and the state of the pulse, tongue and surface; all of which, in phrenitis, mark increased action in the circulating system, as well as great functional disturbance. At the same time, we must not forget that that form of symptomatic mania, accompanied by increased circulation through, or congestion in, the vessels of the brain or its membranes, not only resembles phrenitis, but very often ends in it. In such cases we can only become acquainted with the true state of our patient when, simultaneously with the removal of the functional derangement, subside also the maniacal symptoms. If, however, we see the case in its commencement, we ought to have no doubt as to the character of the approaching evil: and if our measures be prompt and active in this stage, the mischief may generally be arrested."

"The delirium of fever, and that often present in the last stage of phthisis, is attended in each by concomitant symptoms, sufficiently marking its origin."

"The diagnosis, therefore, in insanity, is easy enough."

34. *Feigned Insanity*.—Besides having to discriminate insanity from diseases simulating it, the medical practitioner may be called upon to decide how far, in any given case, the symptoms present are those of insanity, or are assumed for the purpose of simulating that disease. Now, while the diagnosis of real disease, as phrenitis, hysteria, &c., from insanity is easy enough, the discrimination between real and feigned insanity must always be a matter of great difficulty. We had occasion to discuss this subject in an essay in the second number of the "*Journal of Psychological Medicine*," from which we extract, with some slight abbreviation, the section on the diagnosis:—

"Section 5. *The Diagnosis*.—Seeing, then, that the diagnosis between real and feigned insanity is attended with so great difficulty, it becomes of importance to endeavour to discover rules which may guide us in the examination of any supposed case of feigned mental disease."

"There is only one broad and simple rule—viz., *an intimate acquaintance with the varied phases of intellectual and moral disorder which may affect the human mind*; and, in proportion to the extent of his knowledge of this subject, will be the physician's success in deciding on suspected cases."

"Certain distinctive marks which are likely to exist between a case of real and one of feigned insanity may, however, be deduced from this knowledge."

"A few such diagnostics, I have, in the following section, endeavoured briefly to present, under the heads of mania, dementia, (including chronic mania,) monomania, melancholia."

"a. *Mania* —Although mania might be simulated, so as readily to impose upon those not acquainted with the symptoms of the disease, I feel satisfied that any one conversant with the treatment of insanity would detect the impostor."

"It is a physical impossibility for a person of sound mind to present the con-

*timed* watchfulness, excitement, and resistance to the influence of medicine, which characterise this disorder.

"Again, the premonitory symptoms, as diseased action of the moral feelings, disorder of the digestive functions, headache, sleeplessness, &c., will, in a case of feigned insanity, be absent.

"A careful consideration of this point, together with the continued watching of the suspected person for a day or two, and the administration of an ordinary dose of opium, tartrate of antimony, colocynth, &c., would go far to aid in forming a correct diagnosis. Farther, the insensibility to all external impressions, as hunger, thirst, &c., which pre-eminently distinguishes mania from other varieties of mental disease, as also the total absence of all sense of decency and care for cleanliness, will not readily be for any period simulated.

"Violence and incoherence of thought are the only indications associated in the public mind with mania, which being present while the above-noticed premonitory and accompanying symptoms are absent, would readily enable us to detect the impostor.

"The frequency of the pulse has been much insisted on as a diagnostic of mania, particularly by Drs. Rush and Foville, and the late Sir H. Hallford:

"My pulse, as yours, doth temperately keep time,  
And makes as healthful music: it is not madness."—*Hamlet*.

"The following table would, however, lead to the conclusion that frequency of the pulse cannot be considered as diagnostic of mania. I extract it from Professor Guy's 'Principles of Forensic Medicine.' The observations were made on eighty-nine insane females by Leuret and Mitivié, and on fifty healthy persons of the same sex by Dr. Guy. The results are expressed in per centage proportions of the whole number of observations, and show that *in forty-two per cent. in healthy females the pulse was above ninety, while in insane females, in only nineteen per cent. did it exceed ninety.*

State of Pulse.*	Leuret and Mitivié.	Professor Guy.	
		Standing.	Sitting.†
Above 100	8 per cent.	30 per cent.	12 per cent.
90 to 99	11 "	12 "	18 "
80 to 89	43 "	24 "	20 "
70 to 79	33 "	22 "	32 "
60 to 69	4 "	12 "	14 "
Under 60	1 "	0 "	4 "

"*b. Dementia (including chronic mania).*—This disorder would be more readily feigned than mania.

"Although here there is present partial incoherence of thought, the patient going off at a tangent from the subject of conversation, he generally, when questioned, is enabled to fix his ideas, and give a pertinent answer to a question put to him. Again, the perfect state of the memory of long past events, as compared with that of recent, is a striking feature of the real disease, not likely to be simulated. The impostor, in his anxiety to impress his hearers with the perfect disorder of his intellect, would, in all probability, overact his part, and give to every question an absurdly false answer.

"Still, in the more aggravated forms of this disorder, the power, even for an instant, of fixing the ideas, and the memory of even past events are so entirely lost, that these points would not fail in establishing the diagnosis.

"In such instances, the previous history of the case would aid much in decid-

\* Those farther interested in the state of the pulse in the insane may consult, with advantage, an elaborate paper on the subject by Dr. Earle.—*American Journal of Medical Sciences*, No. xviii. art. 4.

† It being just possible that Leuret's observations were made in the sitting posture, Dr. Guy has given a column to that position also, which latter observations render the relative proportions above 90, in healthy females 30 per cent., in insane females 19 per cent.



ing as to the reality or simulation of the disease, the symptoms of confirmed dementia not generally presenting themselves but as a sequel to mania, monomania, or some other form of mental disease. Again, such persons are insensible to the operation of the passions of hope, fear, anger, &c., the emotions of which may, in those feigning dementia, perhaps be produced. Shakspeare, who evidently must have studied insanity from nature, notices this in that beautiful delineation of feigned dementia or chronic mania in the character of Edgar:

‘My tears begin to take his part too much,  
They’ll mar my counterfeiting.’—*King Lear*.

“Foderé, in his ‘*Traité de Médecine Légale*,’ mentions having thus detected an impostor, simulating this variety of insanity, viz. by ordering the application of the actual cautery.

“*c. Monomania*.—The simplest form of this disease is characterised by the presence of a false idea, or hallucination, which hallucination might with considerable success be stimulated.

“The most marked difference between a real and feigned case of monomania is in the condition of the power of reasoning. A real monomaniac cannot be reasoned out of his false ideas; and in the maintaining of them will set all the principles of logic at defiance which the impostor would not, from a fear of discovery, venture to do. ‘In real monomania, the patient never troubles himself to make the subject of his delusion square with other notions with which it has more or less relation; and the spectator wonders that he can possibly help observing the inconsistency of his ideas, and that when pointed out to him, he should seem to be indifferent to, or unaware of, this fact. In the simulator, on the contrary, the experienced physician will detect an unceasing endeavour to soften down the palpable absurdity of his delusions, or reconcile them with correct and rational notions.’ (Ray, *op. cit.*)

“Again, the impostor will endeavour to force his delusion on the notice of observers, while the real monomaniac rarely recurs to his false ideas, unless when questioned, or when the conversation bears upon the subject.

“These two points appear to me to be the safest grounds on which to endeavour to form a correct diagnosis between real and feigned monomania.

“The more complicated form of monomania—viz. that preceded and accompanied by perverted action of the moral powers, and in which the delusion is but a symptom of the existing moral disorder, is not likely to be feigned—still less likely to be successfully so.

“*d. Melancholia*.—The simplest form of melancholia, viz. that unattended by bodily disease, and exhibited chiefly in an obstinate refusal to answer questions, and in a total disregard of all that is passing on around, might be successfully simulated. A case of this nature occurred to me, which I had under my observation for several months, and where I did not even suspect that the disorder was feigned.

“In suspected cases, the endeavouring, as is recommended above, to excite one or other of the mental emotions, and careful observation, are the only diagnostic marks that occur to me.

“It is a disorder with which the public are not so well acquainted as with general or partial mania, and which is not, therefore, so likely to be feigned.

## § VII.—*Incubation.*

Dr. Forbes Winslow\* has recently directed the attention of the profession to the period of the incubation of mental disease

35. *Urgent necessity of attending to the Early Signs and Symptoms of Disordered Mind*.—“I have no hesitation in asserting,” says Dr. Winslow, “that a large proportion of the 8736 incurable lunatics confined in the asylums of England and Wales, are reduced to this melancholy state by the neglect to which they were subjected in the incipient stage of the malady. . . . Incipient insanity, provided it be not the result of severe physical injury to the head, or has not a congenital

\* The incubation of Insanity, by Forbes Winslow, M. D. London, 1846. (*For private circulation.*)

origin, or is not associated with a strong hereditary predisposition, yields as readily to treatment as incipient inflammation or other ordinary diseases with which we have daily to combat. . . . The value of the symbols of incipient cerebral mischief is often not sufficiently, if at all, estimated until it is too late to repair the injury done. The storm has come on; we have neglected to take the necessary precautions against the threatened hurricane, and the consequence is inevitable and irreparable loss—not of life, but of all that made life desirable! And then, as Dr. Burrows observes, ‘comes the bitterness of self-accusation, and the unceasing regrets of the near connexions of the lunatic, because they have persevered in their wilful blindness till the calamity they deprecated has occurred.’”

36. *Duration of the period of Incubation.*—“With reference to the average period of incubation, my experience accords with that of Esquirol and other distinguished Continental and British psychological authorities, who have maintained that this stage may last for months, and even for years, before the explosion takes place. Pinel has related the history of a case in which the disease must have been in this stage for no less a period than fifteen years! I have often been consulted by patients who have voluntarily confessed to me that for some considerable time they have heroically struggled against the encroachments of this disorder, and this contest has been carefully concealed from those most nearly related to and associated with them. The duration of this premonitory stage must of course greatly depend upon the intensity of the exciting cause and the strength of the predisposition.”

37. *The Stages of the Period of Incubation.*—These Dr. Winslow divides into three.

1st. *The stage of consciousness.*—“As far as I can ascertain,” he says, “from the confession of patients, from an attentive examination of the numerous cases which have come under my observation, and from a careful investigation of the history of other individuals, I am induced to believe that for a long period prior to the actual development of insanity the patient is conscious of the existence of cerebral disorder, and of a deviation from mental health. . . . During the stage of consciousness, the friends of the patient sometimes perceive an alteration in his manner or temper, but these changes are seldom attributed to their proper cause—cerebral irritation. . . . In cases of insanity, accompanied by suicidal impulse, the stage referred to can usually be detected: but, alas! how seldom is it noticed until after an attempt, and often an effectual one, has been made upon the life! Reports of coroners’ inquests, which daily appear in the ordinary channels of communication, contain ample evidence of this fact. It is almost invariably stated that the party who committed suicide had for some time previously been much depressed in spirits—had exhibited an irritability of temper—that his habits had become changed—that he had neglected his ordinary duties, and had been apprehensive of some approaching calamity. Yet these well-marked symptoms of cerebral disease had passed unobserved, nothing being done to save the individual from the fearful abyss into which he was about to be precipitated!”

2d. *The stage of weakened volition.*—“Following the stage of consciousness, we have that of weakened volition. . . . If, for example, the mind be allowed to dwell on any great loss which it has sustained, without an effort being made to rouse it from its torpid condition, strange unnatural fancies crowd upon the imagination. Conscious of the existence of these ideal creations, the individual may make an effort to dismiss them from his mind, and for a time he may succeed. The power of volition at last becomes lessened in strength, until all efforts to control the train of thought cease, and the individual abandons himself to the predominant morbid idea.”

3d. *The stage of moral incoherency.*—“Among the earliest signs of approaching insanity is an alteration in the affections, the aversion being frequently in the direct ratio with the former attachment. . . . This tendency to take dislikes and aversions is not, as Dr. Conolly observes, confined to individuals. He refers to a case in which the patient, at the commencement of mania, complained of the difficulty he experienced in guarding against dislike to particular parts of a room or of a house, or of particular articles of furniture or of dress.”

38. *Characteristic Symptoms of the Period of Incubation.*—1st. *The mental symptoms.*

—"In this stage of cerebral disease, the patient manifests an earnestness about and a disposition to magnify trifles—to be inordinately depressed or elated by circumstances and feelings which would produce no effect on a properly-balanced and well-regulated mind. This is often followed by an excessive sensibility to impressions. The patient neglects his ordinary business, avoids the society of those with whom he has always associated—becomes suddenly extravagant in his habits—is subject to violent fits of passion—quarrels with his best friends about the most insignificant matters—becomes, without any cause, extremely jealous, and manifests a peevishness of temper and an impatience of contradiction; he has either a very exalted or low estimate of his own self-importance. A peculiar restlessness is one of the striking characteristics of incipient insanity.\* A patient, not higher in rank than a keeper of a small country inn, and who was in the habit of consulting Dr. Conolly when he found his melancholy fits approaching, used at such times to complain of insufferable restlessness, without relief by day or night; and, striking his hand on his forehead, would express his misery by saying, with all the energy of morbid excitement: 'I am overwhelmed with a sea of thoughts.'"

2d. *The physical symptoms*—Dr. Winslow calls attention to the premonitory symptoms of approaching insanity, evinced by a sense of tightness or constriction across the forehead, sometimes attended by noise in the ears, flashes of light, flushing of the face, &c.; by a state of watchfulness by night, and restlessness by day: by costiveness, by gastric and hepatic derangement. "The inability to sleep," he says, "is a symptom which ought never to escape careful observation: I consider it one of the most valuable indications we possess of approaching insanity; it has never yet deceived me. Whenever I see this state of watchfulness by night, and restlessness by day, I feel that not another moment is to be lost. The *pulse* is the pulse of excitement; it is sometimes quick, and then the reverse. In incipient insanity it is an uncertain sign."

#### § VIII.—*Pathology.*

##### I. MORBID ANATOMY.

39. The idea that the pathological cause of all cases of mental derangement, or even of the majority, consists in morbid alteration of the structure of the brain, and in the presence of the same of some one of the products of inflammation, is beginning to be doubted by those best qualified to judge in the matter, and insanity is being regarded more as a functional than an organic disease. Indeed, it may be asserted, without fear of contradiction, that no pathologist could in nine-tenths of the cases of mental derangement† which prove fatal, take upon himself to say, from an examination of the brain, whether the person had during life been of sound mind or not.

Dr. Seymour has well pointed out the unsatisfactory relations in which morbid anatomy and mental derangement at present stand.

"I go on," he says, "to speak of the little advantage hitherto which morbid anatomy has contributed to our improvement in the understanding of cases of mental derangement, and hence in the art of *curing*—the first great object of every physician's inquiries.

"Sir Benjamin Brodie told me that he had examined very accurately with Mr. Tatum, surgeon to St. George's Hospital, the brain of a gentleman who had been confined for many years, nor could he ascertain any apparent alteration from ordinary structure. Many, many cases of a similar nature have occurred, but, above all, the numerous and permanent cures which have arisen from allaying functional disturbance, prove that mental derangement does not necessarily depend on organic disease of the brain. If a lunatic advanced in life dies of apoplexy, the

\* The patient appears to realize the conceptions of the poet:

"I would not if I could be blest,  
I want no other paradise but *rest*."

† We here use the word *mental derangement*, as including all departure from the healthy manifestations of mind, and as opposed to fatuity and paralysis, where the mind is not so much deranged as destroyed, and its manifestations entirely suspended. In these latter instances organic alteration of the brain is generally present.



effusion of blood or fluid into one of the ventricles of the brain, or, at least, the condition of the arteries which produced it, is considered quite enough to explain the preceding malady. In another case the blame is laid to the vesicles found in the choroid plexus; the observer forgetting that such cases occur in very large numbers, without any degree of mental aberration ever having been observed. At another time, adhesion of the membranes dependent on age, or complete ossification and obliteration of the sutures, have been quite enough to satisfy the observer, even though he finds the same appearance next day in a patient who has died of carcinoma of the rectum, or stricture of the bowel. And this was still more the case, when all disease was considered to be the result of inflammation, acute or chronic; any appearance of thickening or increased vascularity, however old the former or recent the latter, accounted, in default of other appearances, for the mental aberration of the patient. For example, several cases of post-mortem examination are related in the early part of the work of the late Sir W. Ellis. Now I feel satisfied that in no one of these cases are there any appearances which I have not seen in patients who have died of disease wholly unconnected with disordered mind."

Under this category must be included the recent investigations of Dr. Boyd (Edin. Med. and Surg. Journal), and of Dr. Hitchman (Lancet), into the morbid anatomy of insanity.

"Another circumstance," says Dr. Burnett,\* "which has not a little contributed to retard success in the treatment of insanity, and to divert the attention from this great object, has been the very conflicting evidence furnished by pathology, but especially by morbid anatomy. While one declares that the disease is inseparable from organic lesion of the brain, however local in its sphere, or microscopic in its character, another asserts that he has made autopsies without number upon the bodies of those who have died insane, not only in which no manifest alteration, either in character or consistence, could be detected in the brain, but in which he has found a great variety of morbid changes present in the organs remote from the supposed seat of the affection."

40. *Gangrene of the Lungs in the Insane*.—Dr. Fischel, of Prague,† has drawn attention to the frequency of gangrene of the lungs in the insane of that city. From an extended series of observations he concludes that this condition is found in 1·6 per cent. of all those who die of sound mind, and in 7·4 per cent. of all cases of insanity terminating fatally. Such is not the case in this country, nor, according to the experience of M. Guislain, in Belgium either. We have only seen one case of gangrene of the lungs in the insane, and M. Guislain‡ met with only five cases during a period of fourteen years, in which he enjoyed most extensive opportunities of observation.

## II. CHEMICAL PATHOLOGY.

A reasonable hope may, we think, be entertained that further researches into the chemical composition of the fluids in the insane will at last throw light on that obscure subject, the pathology of insanity. The established fact of the hereditary transmission of insanity would at once point out an analogy between it and other hereditary blood-diseases, as gout, rheumatism, and scrofula. Again, the influence which certain medicinal agents,§ as opium, alcohol, the laughing gas, tobacco,

\* Insanity Tested by Science, and shown to be a Disease rarely connected with permanent Organic Lesion of the Brain. By C. M. Burnett, M.D. London, 1848.

† Vierteljahrsschrift für die praktische Heilkunde, 1847; quoted in the Gazette Médicale, Fevrier 1848.

‡ Gazette Médicale, 1836 and 1838.

§ See a most interesting paper "on the Psychological Effects of Certain Medicinal Agents," in the second number of the Psychological Journal. We regret that our limits prevent us from liberally extracting from this valuable essay.

A recent writer in the "British and Foreign Medical Review" (January 1847), with reference to this subject, says, "Whatever opinion we may hold in regard to the much-vexed question of the connexion between mind and body, there can be no doubt of the influence which the condition of the latter exerts over the operations of the former; and there are no more striking examples of such an influence than those which are presented by the introduction of alcohol, opium, hachisch, nitrous oxide, or some other intoxicating substance

&c.—agents which we know to act by combining and circulating with the blood—exert on the mental manifestations, would likewise tend to demonstrate the dependence of a healthy mental condition on a healthy, i. e. normal state, of the fluids of the body. Such also is the inference to be drawn from the effect the retention of urea in the system exerts over the mind. It is, therefore, with peculiar satisfaction that we draw the attention of our readers to recent investigations into the chemical pathology of insanity.

41. *Chemical Pathology of the Urine.*—"Some attention," says Dr. Burnett\* "has been lately paid to the urine of the insane by Erlenmeyer,† Heinrich,‡ Sutherland and Rigby,§ Bird,|| Jones,¶ &c. The most remarkable feature is the excess of the ammonia in the form of carbonate, urate, hydrochlorate, or the ammoniaco-magnesian phosphate. It must not be overlooked that the condition of the urine in these cases may take its character from the low degree of organization in the bladder, which accompanies, more or less, all nervous affections. Mr. Blizard Curling\*\* has alluded to this fact, and he calculates that the alkaline state of the urine owes itself, in some instances, to a loss in the natural sensibility of the bladder, or to a secretion of alkaline mucus from inflammation set up in that organ from the same cause."

Dr. Benze Jones†† has recently investigated the amount of earthy and alkaline phosphates in cases of insanity. "The variation of the phosphates in insanity," he says, "requires a very extended investigation; and this paper is a slight sketch or beginning of a subject which must be filled up and completed by those who have time and means at their disposal."

The following tabular view represents the results of Dr. Jones's researches:—

	Earthy phosphates.	Specific gravity.	Alkaline phosphates.	Total.
<i>Case of General Paralysis :</i>				
Case 1 . . . . .	1.50 per 1000 urine	1028.6	5.40	6.09
Same case . . . . .	1.17 "	1023.3	2.97	4.14
Case 2 . . . . .	.79 "	1022.0	1.23	2.02
Case 3 . . . . .	.41 "	1016.6	5.36	5.77
Case 4 . . . . .	— "	1018.3	—	1.30
Case 5 . . . . .	— "	1006.7	—	1.35
<i>Cases of Mania :</i>				
Case 1, during attack . . . . .	1.32 "	1029.3	7.58	8.90
Ditto, convalescent . . . . .	.67 "	1020.0	2.44	3.11
Case 2 . . . . .	.42 "	1023.3	4.28	4.70
Case 3 . . . . .	— "	1025.9	—	1.26
Case 4 . . . . .	.74 "	1015.3	.38	1.12
Ditto . . . . .	.72 "	1015.9	.46	1.18
<i>Cases of Melancholia :</i>				
Case 1 . . . . .	.67 "	1024.3	3.36	4.03
Case 2 . . . . .	— "	1011.3	—	2.71
Case 3 . . . . .	.71 "	1025.9	3.08	3.79
Case 4 . . . . .	1.47 "	1027.9	2.34	3.81
<i>Case of Senile Dementia</i> . . . . .	.71 "	1021.0	2.10	2.81

into the current of the circulation. That the presence of a minute portion of any of these substances—a portion almost too minute to be recognized by ordinary chemical processes—in the blood which is passing through the capillaries of the brain, should so alter its relations to the nervous substance as to produce results which manifest themselves in an entire change of the ordinary course of psychical phenomena, must always be included, we apprehend, as a fundamental fact in any theory that may be framed by philosophers who please themselves with speculating on this mysterious question."—P. 219.

\* Op. cit. p. 48.

† Observat. Physiol.-Pathol., &c. De Urina Maniacorum.

‡ Häser's Arch., vol. vii. 2; also Zeitschrift für Psychiatrie. Dritter Band. Erstes Heft.

§ Medical Gazette, June 1845.

|| Urinary Deposits, p. 188.

¶ Medico-Chirurg. Transactions, vol. xii. p. 21.

\*\* Medical Gazette, 1836.

†† Lancet, September 11, 1847.

The conclusions which he arrives at are thus stated:—

"From the five cases of 'general paralysis of the insane,' no very certain deduction can be made. In four of the cases, the disease was in an early stage. In two of these four, the total amount of phosphates is diminished; in the other two, the phosphates are about the natural quantity. As regards the earthy phosphates, there is certainly no increase in their amount in the four analyses here given.—The fifth case had been for many years in St. Luke's Hospital. The decomposition of the urine was probably the cause of the low specific gravity; but this would not have altered the amount of alkaline phosphates, which are certainly much below the healthy quantity.

"The amount of the phosphates varies in the different cases remarkably; far too much to admit of accurate deductions from so few analyses. General paralysis being a chronic disease, I do not expect that even a very extended inquiry will give any positive results; and it is on this account I would rather direct further directions to those cases of insanity in which acute paroxysms occur, such as cases of mania. Of the four cases of mania in which I examined the urine, the first is the most interesting, because, in it, I think, there is evidence of that increase of the amount of phosphates excreted during a paroxysm, which, I hope, further researches will confirm; when the patient was convalescent, the amount of phosphates is found to be much diminished.

"In two other cases of mania, in which there were no acute symptoms, the amount of phosphates is so much diminished that it approaches closely to that diminution of the phosphates which I have observed in some cases of delirium tremens. This point also requires a far more extended inquiry. Are there two states of mania—one, in which the phosphates are increased; the other, in which they are diminished? In delirium, I shall show the probability of the existence of two such states. In mania, it seems reasonable to expect that the phosphates would be increased during the paroxysm; but the diminution of their amount, if proved, would be of equal interest. At present, however, the facts want to be proved; and it is desirable to do no more than notice the distinction, for the purpose of directing inquiry to the subject.

"The four cases of melancholia on which my analyses were made, give no marked results; all were recent cases. The contrast between the amount of alkaline phosphates in the last case of melancholia and the first case of mania is, perhaps, worthy of observation."

42. *Chemical Pathology of the Blood*.—Dr. Burnett,\* in his treatise on "Insanity tested by Science," &c., states the blood to be the seat of insanity. "Insanity," he says, "is not, and ought not, in the first instance, and often to the very last, to be regarded as a disease of the brain; but as a disease floating in the blood, having no fixed or local character, but producing the morbid phenomena which are comprehended under the title of insanity; it arises from a derangement or mal-assimilation of those particular materials of the blood—carbon and phosphorus—which constitute the bulk of the elementary tissue of the brain and nervous system generally. When, therefore, we say we believe the disease to be in the blood, we consider it to exist there in the form of either deteriorated or wrongly constructed chemical compounds. In this sense it must be the *seat*, although Fletcher and Broussais consider it only in the light of the *vehicle* of disease."

"There is," he continues, "much experience, and no slight argument, to induce

\* We cannot withhold the expression of our most unqualified surprise, that Dr. Burnett should appear to regard himself as the originator of this theory, and that no mention is made in this work of the earlier publication by others of a similar opinion. Common justice induces us to extract the following passage from the "British and Foreign Medical Review" for January, 1847. "The marked correspondence which may be traced between the phenomena of insanity and those which are induced by the introduction of such substances (alcohol, opium, &c.) into the blood, must not be overlooked in any attempt to arrive at the true pathology of the former condition, or to bring it within the domain of the therapeutic art. We believe that Mr. Sheppard may claim the merit of having first prominently directed attention to this method of viewing the phenomena of insanity; and we would take this opportunity of stating our present feeling, that in our unfavourable criticism of his little work, 'Insanity a Blood Disease,' (see vol. xvii., p. 526,) we had rather too strongly before our eyes the *demerits* of his hypothesis, than its positive value." (P. 219.)



us to direct our inquiry to the condition of the blood in mental diseases. And, from close observation, we are convinced that the disease called insanity, though unavoidably connected, in some instances, with organic lesion, and even destruction of the brain, as after many mechanical injuries, is, in four cases out of five, in the first instance, a functional disease, quite unconnected with any morbid alteration or change of structure in the brain; and in many of these four cases, it continues through a long series of years still a functional disease, kept up by mal-assimilation. It is, in fact, according to strict pathology, a disease of the blood, but pre-eminently so from its non-inflammatory character preventing the morbid alteration of structure, more or less quickly consequent on inflammatory diseases. We believe that insanity in such cases is immediately caused by the deterioration of the fatty matter of the blood, by which the carbon and phosphorus are unable to combine in healthy proportions, which substances in a normal state, it is known, form the elementary tissue of the brain and nerves, and which chief constituents fail to make that part of the organism of the body amenable to the operation of the vital and mental principles conveyed in the blood.

"Whether this may arise from causes immediately connected with the processes of primary and secondary assimilation, or whether it is consequent upon a particular state of the venous circulation in the head, is uncertain; but the fact made known by Braconnot and Chevreul, that the fatty matter united with phosphorus, which constitutes the essential substance of the brain and nerves, has been found by them in the blood, thus combined, favours the idea that the original fault is in the process of secondary assimilation, by which the carbon and phosphorus unite with other matters to form new and abnormal compounds. We, however, incline more to the belief that the true separation of cerebral and nervous matter, however essentially dependent upon healthy secondary assimilation, is, nevertheless, only finally completed in the blood-vessels after they have entered those tissues."

The happy results following Guggenbuhl's exertions on behalf of the cretins,\* illustrate, as Dr. Burnett has pointed out, the truth of this theory. The marked improvements following the removal of such cases from within the influence of the exciting causes of their disease, viz., deteriorated air and food, "put to silence any hypothesis that assumes that the organization of the brain was malformed in the common sense of the word." Again, argues Dr. Burnett, in another chapter, "the success which attends the efforts of many enlightened physicians to restore, in some degree, the mental powers of the idiotic and imbecile, is again a verification of the same principle we are contending for. If these poor creatures had organic disease, or malformation of the brain, they would manifest no improvement when exposed to the action of those second causes which have been so long denied them; but if the natural organization of the brain has only been arrested, there are both reason and hope that human efforts may partially, though not entirely, restore them. This is precisely what has taken place."†

Dr. Burnett has, in the first three chapters of his treatise, with considerable ability, developed the theory of mental derangement, being primarily a blood disease, and has thus done much to forward the pathology of insanity. We are, however, tempted to conclude this paragraph with a continuation of the passage we have already in part quoted‡ from the "British and Foreign Medical Review" for January, 1847, and which, we think, in a measure applies to Dr. Burnett as it does in the reviewer's opinion to Mr. Sheppard, the originator of this theory, that insanity is a blood disease. "His (Mr. Sheppard's) notion," says the writer, "was, we are ready to admit, quite correct in regard to a certain class of cases of insanity: and his fault was that which is so common with young writers, namely, hasty generalization; the same idea being most unwarrantably stretched, so as to include *all* forms of this disease. There can be no doubt that the properties of the blood may be perverted by abnormal changes going on within the system, as well as by the direct introduction of poisonous substances from without; and its

\* See Twining on "Cretinism."

† See Notes on the Parisian Lunatic Asylums, by Dr. Stubbs, "Journal of Psychological Medicine," No. 1, January, 1848.

‡ See foot-note, page 355.

due relations to the nervous structure may be thus completely changed, so that psychical operations are seriously interfered with, and a form of insanity develops itself which is capable of being removed by the adoption of measures calculated to eliminate the morbid matter from the blood, and to restore it to its pristine purity. And we have little doubt that a part, at least, of the phenomena of those forms of insanity which are brought on by what are commonly termed *moral* causes, are referable to the same agency; for every physiologist well knows how much the excitement of the passions and emotions involuntarily and, indeed, unconsciously affects those organic functions by which the blood is prepared and renovated; and how speedily any affection in the depurating actions (those of the liver and kidney more especially) is manifested in the abatement or irregularity of the functional powers of the nervous centres. We believe that an attentive study of the etiology and phenomena of insanity will gradually lead to the establishment of well-marked distinctions between this class of cases and that in which disease of the cerebral structure itself is the proximate cause of the disordered psychical manifestations; and that in proportion as this difference is kept in view, will be the clearness of our prognosis and the efficiency of our remedial measures."

### III. MENTAL PATHOLOGY.

43. *Double Consciousness*.—Of the many suggestions hard to solve, which the symptoms of insanity present to the mental philosopher, there are none more so than those which arise from a contemplation of that most remarkable of mental phenomena, double consciousness, a condition in which the individual has a double existence, retaining while in the one no recollection of the transactions of the other.

Dugald Stewart\* defines consciousness as "the immediate knowledge which the mind has of its sensations and thoughts, and in general of all its present operations. From consciousness and memory," he adds, "we acquire the notion, and are impressed with the conviction of our own personal identity." Now, in the diseased state we are considering, there are *two distinct* consciousnesses apparently unconnected one with the other; as it were the manifestation of a double mind in one body.†

Two such cases have lately been recorded, one by Dr. Skae,‡ the other by Dr. Browne.§

In Dr. Skae's case, religious melancholia alternated with a sound state of mind. "From an early period in the history of this case," says Dr. Skae, "it was observed that the symptoms displayed an aggravation every alternate day. On each alternate day the patient will neither eat, sleep, nor walk, but continues incessantly turning the leaves of a Bible, complaining piteously of his misery, &c. &c. On the intermediate days he is, comparatively speaking, quite well, enters into the domestic duties of his family, eats heartily, walks out, transacts business, assures every one he is quite well, and appears to entertain no apprehension of a return of his complaints. What is chiefly remarkable and interesting in the present features of the case, is the sort of double existence which the individual appears to have. On those days on which he is affected with his malady he appears to have no remembrance whatever of the previous or of any former day on which he was comparatively well, nor of any of the engagements of those days; he cannot tell whether he was out, or what he did, nor whom he saw, nor any transactions in which he was occupied. Neither does he anticipate any amendment on the succeeding day, but contemplates the future with unmitigated despondency. On the intermediate days, on the other hand, he asserts that he is quite well, denies that he has any complaints, and appears satisfied that he was as well the previous day as he then is. On that day he transacts business, &c. &c., and distinctly re-

\* Outlines of Moral Philosophy.

† See a curious book, by Dr. Wigan, "The Duality of the Mind," &c. which our limited space forbids us noticing.

‡ Case of intermittent mental disorder of the tertian type with double consciousness.

§ "Northern Journal of Medicine," No 14.

§ Case of double or diseased consciousness. "Phrenological Journal," July, 1847.

members the transactions of previous days on which he was well. He appears, in short, to have a double consciousness—a sort of twofold existence—one half of which he spends in the rational enjoyment of life and discharge of its duties; and the other in a state of hopeless hypochondriacism, amounting almost to complete mental aberration.”

Dr. Browne's case appears to partake more of the chameleon hues of hysteria, consisting of “trances of two hours, occurring repeatedly during each day,” and yielded to a moral impression, to the apprehension of being removed to the vicinity of a lunatic asylum, and to the suspicion of being regarded as of unsound mind.

44. *Criminal Insanity*.—The various cases of presumed mental derangement which have recently been the subject of criminal prosecutions, have led to the frequent discussion of the question of responsibility and irresponsibility of the partially insane. Our limits will only permit us to name the recent publications on the subject, to which we would wish to refer our readers for an exposition of this most intricate question.

1. “Clinical Facts and Reflections;” also “Remarks on the Impunity of Murder in some cases of Presumed Insanity;” by T. Mayo, M.D. Lond. 1847.

2. “The Consciousness of Right and Wrong, a Just Test of the Plea of Partial Insanity in Criminal Cases;” by C. Lockhart Robertson, M.D. Edinburgh, 1847.

3. “Criminal Insanity;” a review of these two essays. “Journal of Psychological Medicine,” No. I. January 1848.

4. “British and Foreign Medical Review;” July 1847. Article 16.

5. “The plea of Insanity in Criminal Cases;” by Forbes Winslow, M.D.

#### § IX.—Medical Treatment.

Considerable attention has lately been devoted to the medical treatment of the various forms of mental disease.

Her Majesty's Commissioners in Lunacy, in the Appendix to their last Report (1847), have collected much valuable information on this subject; and several authors, particularly Dr. Seymour and Dr. Williams, have recently treated of it in their published works.

“If,” observes Dr. Seymour, “there is no evidence of morbid growth or change existing, marked by palsy (especially of the lower extremities), fits, loss of memory, impaired vision, deafness, &c., we may fairly believe that the mental derangement is the result of disturbance of the functions of the brain, either originally or secondary to disease of some important organ at a distance; and we are bound by every sense of duty, by every reason which ought to direct the conduct of the physician, to apply the resources of our art to its cure.”

“As a prefatory remark to speaking of treatment,” says Dr. Steward, “I would wish to impress upon the minds of my readers the fact too often lost sight of, that insanity, generally speaking, in its early stages, is a curable disease; that the first period of its approach is the time when treatment is most effective; and that the want of proper management at this critical moment, and, as is too often the case, the total absence of medical treatment, constitute the true cause of that great proportion of incurable cases which has made insanity the opprobrium of medicine. . . . . In laying down a plan for the medical treatment of the insane, it should always be borne in mind that in the majority of cases we have difficulties to encounter, not present where the mind is perfect. Not only are generally closed against us all the usual sources of information, but having formed our judgment and decided our plan of treatment, we have still, with few exceptions, to overcome the difficulty of determined opposition to the administration of remedies. Nothing is more easy than to prescribe; the difficulty is to ensure compliance with our prescriptions, and this difficulty contracts within narrow limits our list of remedies. Still there remain to us ample means, if judiciously employed, of answering every useful indication. . . . . In insanity, not only must we depend in great measure upon our own unaided judgment as to the nature and state of the disease, but we must so select our remedies, and so choose our mode of exhibition, as to ensure the expected result without consulting the will of our patient; and as the difficulties to be overcome are always regu-



lated by the form of the maniacal affection, it stands to reason that, to ensure success, experience is equally important in this as in any other branch of medicine." (Op. cit.)

We shall, in the present section, endeavour to present a condensed view of the remedies which have lately been suggested or discussed for the medical treatment of the various varieties of insanity.

# I. MANIA.

45. *General Bleeding*.—Her Majesty's Commissioners in Lunacy state that "the medical men who have replied to our inquiries are nearly uniform in condemning the practice of venesection, or general bleeding, in ordinary maniacal cases. . . . General blood-letting is resorted to only in cases of a peculiar description, viz., in cases displaying plethora, which threatens apoplexy, and never for the purpose of quieting a paroxysm of excitement." (Report, 1847.)

In mania, however, as Dr. Williams has well observed,\* "*irritation* is often confounded with *inflammation*. The maxims so ably taught by Mr. Travers are forgotten; the object being to calm the action, not to diminish from the power—this nervous power being much more easily depressed than raised. Should this advice be neglected, and bleeding be ordered, stupor, or coma, or confirmed mania may be the consequence. In many cases where there is the most ferocious delirium, with great muscular power, yet the pulse is very quick, weak, and fluttering, and even the slightest depletion at once knocks down the powers; but even if the patient should again rally, there is great danger of his becoming idiotic. As Dr. Marshall Hall has so truly stated, under *irritation* exhaustion is sooner produced than in health; while under *inflammation* the system bears loss of blood with less exhaustion than in health. . . . No one was more anxious than the late Dr. Abercrombie to point out the impropriety of depleting in many affections of the brain, even where there are wildness, excitement, and incoherency with great restlessness."

46. *Local Bleeding*.—There are but few cases of mania, whether depending upon irritation, or on a congested state of the brain, which are not more or less benefitted by judicious local depletion; and the more recent the case, the more marked will be the advantage derived from the same. Almost every physician of any experience, who may lately have recorded his opinion on the value of local blood-letting in the treatment of mania, recommends its employment.

Leeches may be applied to the shaven scalp, or to the temples; or else the cupping-glasses may be had recourse to, applied either to the temples or to the nape of the neck. The former situation is to be preferred. Again, as Dr. Williams has well observed, "a very efficient way of relieving head symptoms, when dependent on visceral congestion, more especially of the liver, is applying leeches to the rectum, and, if considered necessary, subsequently placing the patient in a warm bath. A large quantity of blood may be lost in this way without producing much prostration." (Op. cit., p. 32.)

47. *Purgatives*.—In almost every case of mania the bowels are very torpid, the secretions vitiated, and there is generally a large accumulation of fecal matter in the intestines. The bowels therefore require, in the first instance, to be freely evacuated. "Where no opposition is made by the patient," says Dr. Steward, "the choice of remedies is regulated by the same rules which guide us in the treatment of the same. Where there is difficulty in giving opening medicine, croton oil is valuable, because its bulk is small, and its operation generally certain; and should circumstances compel recourse to administration in food, it is not easily discovered. Calomel is a convenient purgative, on account of its being tasteless; but it is not a safe one, unless we can follow it by fluid medicine: for it very often produces its specific instead of its purgative effect. Jalap, being tasteless, is also a useful purgative. If all our efforts to give medicine fail, we must have recourse to small doses of the antimonii potassii tartras, which will soon act upon the bowels."

\* An Essay on the use of Narcotics and other Remedial Agents calculated to produce Sleep in the Treatment of Insanity. By Joseph Williams, M.D. London, 1845.

[In our opinion, the latter means of acting upon the bowels is the most valuable we possess for the treatment of the generality of recent cases of mania, reducing, as it does, alike arterial and nervous excitement, and producing copious fluid and bilious evacuations.]

The vitiated state of the secretions generally demands the *continued* use of some mild laxative.

48. *Emetics*.—"Much difference of opinion," says Dr. Williams, "exists with respect to the advantages or disadvantages of emetics in the treatment of the insane. . . . The objection often made to the employment of emetics is, that congestion of the brain is caused by the violent expulsive efforts; but Sir William Ellis found the temporary inconvenience more than counterbalanced by the subsequent good effects. Many cases of vigilantia, dependent on monomania or even furious mania, will yield to ant. potass. tart., and often, on the vomiting ceasing, refreshing sleep will follow. . . . There are cases of excitement where, although injudicious to bleed in any form, yet, administering an emetic will be found most useful. Patients who have not slept for several nights will often obtain many hours' sleep after vomiting has ceased." (Op. cit., p. 45)

[In recent cases of mania there is generally an accumulation of phlegm, bile, &c., in the stomach, the evacuation of which is often attended by the happiest results.]

49. *Sedatives*.—Dr. Steward entirely condemns the use of sedatives in the treatment of the insane. "Sedatives with the insane," he says, "act generally, if not invariably, as stimulants. They exercise little or no influence over the insomnia of mania, which seems as it were a part of the disease, which resists all remedies, and which yields only when Nature, fairly tired out by long exertion, sinks exhausted, or when sleep comes, the harbinger of returning health. In what dose opium, conium, hyoscyamus, &c., might each produce its sedative effect in the delirium of mania, I know not; neither should I dare to press the medicine so far, lest its sedative effect might be fatal." In this sweeping condemnation of the use of sedatives in the treatment of mania we cannot concur. Our limits forbidding us to enter minutely into the value of each and every sedative, which, by different recent writers, have been recommended for the treatment of mania, we feel assured that we cannot better supply this omission than by quoting the following practical remarks on the use of anodynes in the treatment of mania, recently placed on record by so distinguished a physician as Dr. Alexander Sutherland.

"*Anodynes*.—These remedies are, according to my experience, of essential service in those cases of insanity which border closely upon delirium tremens; in cases of puerperal mania in the acute stage, and particularly in the paroxysms and sleeplessness of mania; in cases where there is great nervous irritability from poverty of blood; and in cases combined with cachexia from starvation and other causes. They seem to me to be contraindicated when there are symptoms of incomplete general paralysis and congestion of the head. Prescribed merely because the case is one of insanity, without taking into consideration physical symptoms accompanying it, or not in proper doses, or not given sufficiently often during the day as well as during the night—these remedies disappoint the practitioner. They keep up irritation, and add to the excitement, instead of allaying it. I have sometimes seen a very simple case converted into a very complicated one by the excessive use of anodynes. There is an idiosyncrasy, as every one knows, in some constitutions which does not admit of the exhibition of narcotics, especially morphia, even in the smallest dose. One-eighth of a grain has been known to produce such incessant vomiting as to endanger the life of the patient. Great care should also be taken, even when the use of opiates is indicated, not to continue them too long; for if narcotization is produced, much harm will follow. The evacuations are hard and black, and the irritation is extreme. At St. Luke's I have been in the habit, since my appointment to the hospital, of prescribing the acetate of morphia in solution with distilled water; in private practice I often combine it with distilled vinegar (a very old remedy in insanity). The hydrochlorate is combined with advantage with dilute hydrochloric acid. I have found the meconiate of morphia very serviceable in cases where the two former preparations have not agreed with the patient. Hyoscyamus and conium are also very serviceable. I

am in the habit, often, of prescribing the former in those cases where it is essential that the bowels should not become constipated; and as it also acts upon the kidneys and skin, it is likewise useful when we wish the increase of the secretions of those organs. Combined with the potassio-tartrate of antimony, henbane is useful also in paroxysms of furor. I have seen considerable lassitude follow the administration of  $\frac{1}{2}$  3j tinct. hyos. with a quarter of a grain of the former repeated three times in the course of the day. This is, of course, in some cases, not to be desired. Combined with camphor, opium allays the irritability of those suffering under mania complicated with delirium tremens; and in the incipient paralysis of the insane tartar emetic is the remedy I place most confidence in. Conium is very useful either given alone or in combination with hyoseyamus and opium. The boasted effects of camphor have not been realised to the extent, at least, which some of its advocates have insisted upon. I think, however, its effects in allaying uterine irritation cannot be doubted. The combination of hop, camphor, and henbane is valuable in such cases. Stramonium is a remedy which has not succeeded in my hands, although I have tried it in large doses. Belladonna and aconite may be placed in the same category with stramonium. I obtained some good effect in the employment of aconite in a case of intermitting mania, where every other remedy had failed. The combination of narcotics is highly advantageous, but, of course, this is well known. I am not in the habit of prescribing narcotics as heroics; but it is material that they should be given in sufficiently large doses. A patient labouring under mania from drink requires large and often repeated doses of morphia or tinct. opii. Hydrocyanic acid is a very useful sedative, and is specially useful where there are pain and a sense of weight about the præcordia; it may be combined, according to circumstances, with an alkali and digitalis; which combination I have obtained benefit from in cases of great nervous excitement, with acid eructations and palpitations of the heart. Cannabis indica I have prescribed in many cases, I am sorry to say, without effect; the preparation, possibly, was not good, although I took great pains in procuring it. The difficulty of obtaining it, &c., and the uncertainty of its effect, must, I think, render the remedy inferior to others whose virtues have been long tested." (Appendix to Report of Commissioners in Lunacy, 1847.)

50. *Counter-irritants*.—"No set of remedies," says Dr. Stewart, "are more useful in symptomatic and organic mania than these. The cases in which counter-irritants are more particularly indicated are those where evident determination of blood to the brain warns us of approaching danger; or where mischief has been done to the brain by a previous attack of apoplexy, and future evil is apprehended. In these cases, as adjuvants to depletion, counter-irritants are of the greatest use. Also they are useful in cases of symptomatic mania, where some accustomed evacuation or secretion has suddenly ceased." (Op. cit., p. 61.)

51. *Tonics*, accompanied with a liberal diet, and a moderate allowance of stimuli, are of great service to the more protracted cases of mania—an opinion recent experience has tended more and more to confirm.

52. *Baths*.—"In no persons," observes Dr. Stewart, "is the circulation more unequal than in the insane. In none is it of more importance to preserve its equilibrium, and to produce and maintain a healthy and vigorous action in the superficial vessels."

In recent cases of mania, the *warm* bath, with cold lotions applied to the head, is often of great value in procuring sleep. "It will generally," says Dr. Williams, "be found a very powerful means of diminishing cerebral congestion, and allaying irritation in maniacal cases. . . . In some cases the *cold* bath, if judiciously used, may prove very serviceable; and many patients who have suffered from partial or complete vigilantia have enjoyed profound sleep after immersion in the cold bath."

53. *Chloroform*.—"This remedy," says Dr. Skae,\* "was used by me immediately after the discovery of its anæsthetic agency; and a number of observations were soon afterwards made with it—some of them in the presence of Professors Christison and Simpson. We found that it produced the same physiological effects upon the insane as upon the sane; and that the most violent and excited were

\* Physicians' Annual Report to the Managers of the Royal Edinburgh Asylum, 1847.



almost immediately put into a state of calm and profound repose by its influence. As a curative agent, it has, as yet, been of no benefit in the treatment of the cases in this asylum, although I am not without hopes that in a certain class of cases it may be of use. I have, however, found it extremely serviceable for many minor purposes; such as the administration of food\* by means of the stomach-pump, and of enemata, and in the performance of various necessary operations." [We recently saw the application of this agent in a most violent case of mania, in the Bethlehem Lunatic Hospital. It had, in this case, on several occasions, been had recourse to, but in each the previous symptoms recurred as soon as the physiological effects of the drug passed off.]

## II. DEMENTIA.

The medical treatment of dementia resolves itself into an application of the principles of medicine to the physical symptoms of the case.

## III. PARTIAL INSANITY.

54. *Melancholia*.—Dr. Seymour has devoted the third chapter of his recent work to a consideration of the medical treatment of this variety of partial insanity, which he regards "as the most usually amenable to remedies." The remedy which Dr. Seymour lauds so highly in the treatment of melancholia is morphia. "During fifteen years," he says, "I have been anxiously watching the result of cases of melancholia treated on this system; upwards of seventy cases have recovered during that period of time, and I consider no case to be called a recovery unless two years, at least, of unabated health have elapsed since the treatment concluded. In nearly twenty cases the treatment has failed, or only given temporary relief. . . . The preparation (continues Dr. Seymour) which I have preferred, and, with two or three exceptions, I have always used, is the acetate of morphia. The mode of preparation—the solution: forty drops of the solution which I have generally employed contain one grain of the alkaloid salt. It has generally been, in mild cases, my practice to begin by a quarter of a grain every night in solution; then, after a week, to increase this to half a grain. It has rarely, in such cases, been necessary to increase the dose beyond half a grain. In severe cases, I begin with half a grain, and increase it speedily to a grain—rarely, most rarely, beyond this dose. The medicine is given at bedtime, and only at bedtime, the period which is intended for sleep; but it must be repeated, *without the intermission* of a single night, for several weeks in mild cases, for at the least three months in the most severe ones. In some of these cases, at first, sleep is not produced; in very few *rest* is not produced. Slight nausea and disturbance of the head are felt the first few mornings, but in these cases almost always at first, and *always after a short time*, but sleep is procured, and the waking hours are free from pain.

"The effect of the medicine is in precise analogy with what follows. Suppose a man toiling with professional anxieties, and with domestic cares, returns home after a larger proportion than usual of the annoyances of his profession or calling, fatigued beyond his powers, wearied in mind. He returns to rest unhappy, discontented, inveighing against his lot, and what he considers to be his peculiar cares. He sleeps sound, and when about to rise in the morning, the sun streaming in at the windows, after a sound sleep, how does he look upon the evils of the preceding day? Do they not lose a large portion of their affliction? Does he not look in a totally different point of view at the very causes of distress which afflicted him the night before?†

\* In all probability the loss of sensation which accompanies the use of chloroform might greatly mask the ordinary symptoms which would indicate the passage of the œsophagus tube into the air-passages; and without great precaution a fatal accident might happen, which has taken place in careful hands without chloroform—the injection of the nutriment into the air-passages.

† Thoughts on the Nature and Treatment of several Severe Diseases of the Human Body. By Edward J. Seymour, M. D., &c. vol. i. London, 1847.

‡ This is beautifully referred to by the great poet of truth and nature, Sir Walter Scott. In "Quentin Durward," he draws the distinction between the feelings of fatigued and re-

"And this is precisely what the effect of morphia, properly applied, effects in cases of melancholy mental derangement, but not once or twice, as would be the case in trifling distress. Hence it must be repeated regularly every night, until the nervous system is soothed. Thus it requires weeks for the medicine to be repeated regularly, even without a single intermission, and the cure is the result. . . . If the dose were constantly to be increased, then, indeed, a vicious habit would be incurred; but it is to be used in small quantities, regularly repeated, and *never increased beyond a certain point*, whether taken for six weeks or six years!"

[Dr. Seymour then proceeds to detail several cases in which this treatment proved successful, and then continues to remark on the other means of treatment to be adopted thus:]

"In the cases hitherto related, no remedy was, in the great majority, employed except the morphia, and taking the precaution of keeping the bowels open every alternate day. This is necessary, as in the first administration the morphia constipates; but after some days this disagreeable consequence disappears, and there are no longer white evacuations, or difficulty in the functions of the bowels. In two or three of these cases, in the first place ice was applied to the head; but this remedy is better adapted to the determination of blood to the organ of the brain in mania, where blood-letting cannot, without danger, be had recourse to. It undoubtedly exists where melancholy intermits with paroxysms of violence. There is another remedy which may be employed,—though I have less often used it, from the inconvenience of its adoption *regularly*, day by day, in this large town—the *tepid bath*. It is, however, very useful in melancholy, especially in that arising in the puerperal state, and in women generally.

"On the first attack of this malady, *purgatives* may be used actively, to remove any obstruction in the bowels, and promote a free flow of the secretions; but in fixed cases, in my experience, purgatives (so called) do harm; they disturb the system, and lower the health of the patient. Hence they may be confined to regulate the state of the bowels, so that they may be relieved, at the least, every alternate day."

[In addition to the above remedies, we place great reliance on the occasional employment of emetics at bed-time, in the early stages of melancholia.]

#### IV. PUERPERAL INSANITY.

From an elaborate paper by Dr. Read\* on this form of mental disease, we extract the following remarks on the treatment.

"The opinion," he says, "of the great majority of those who are in the habit of seeing puerperal mania is, that it does not depend on inflammation of the brain, but that its origin may be fairly traced to *cerebral irritation*, combined with great exhaustion of the nervous system generally."

55. "*Bleeding*.—From what experience I have had on this subject, I fully adhere to Dr. Gooch's opinion, that 'blood-letting is not only seldom or never necessary, but generally almost always pernicious.' I cannot recollect a case of *uncomplicated* puerperal mania in which the lancet was used; and in the most violent forms of the complaint, a few leeches to the head have been alone employed for the purpose of local depletion. Cases have been narrated both of this disease and of delirium tremens, in which a small bleeding from the arm has been followed by speedy dissolution."

56. "*Emetics* have been strongly recommended when the tongue is loaded and freshed nature with all his wonderful power. Thus, after weariness and despair, he adds—

"Yet unwelcomely early as the tones came, they awakened him a different being in strength and spirit from what he had fallen asleep. Confidence in himself and his fortunes returned with his reviving spirits, and with the rising sun, he thought of his love no longer as a desperate and fantastic dream, but as a high and invigorating principle to be cherished in his bosom, although he might never propose to himself, under the difficulties with which he was beset, to bring it to any prosperous issue." (Quentin Durward, vol. ii. p. 145.)

\* The Journal of Psychological Medicine and Mental Pathology, Nos. 1 and 2, Art. Puerperal Insanity, January and April, 1848.

the breath foul, at the commencement of the attack. A combination of ipecacuanha, with antimony, appears to be the best form when there is not great debility or anæmia."

57. "*Purgatives*.—Every obstetric practitioner of experience must be aware how frequently a whole train of alarming symptoms occurring a few days after childbirth, and resembling the primary ones of puerperal fever, is at once subdued by an active aperient or by a turpentine enema, which rids the patient of copious and vitiated dejections; the same good result has often been found from their employment in puerperal mania. Large evacuations of this kind are in fact sometimes the first symptoms of recovery in the patient. Even in cases of unusual exhaustion, constipation should at least be avoided, and the bowels may be unloaded by means of gentle aperients and enemata of warm water. The form of the aperient will, of course, vary according to the nature of the case and the condition of the patient. I have found ʒj of the pulvis jalapæ compositus, given in treacle as an electuary, answer the purpose very well in several cases, and this may be repeated at intervals if required. Dark fetid evacuations are often dislodged; and many instances might be cited in which great improvement was immediately a consequence. Should there be a wish to get rid of the secretion of milk as soon as possible, the hydragogue aperients will be best adapted for the purpose."

58. "*Anodynes*.—Almost all authors on this subject recommend the employment of this class of medicines, taking the precaution previously of properly evacuating the bowels.

"Opiates seem peculiarly adapted to puerperal cases, especially when combined with some diffusible stimulus, such as ammonia, and more especially with camphor. Small doses of opium will, in many cases, increase irritability instead of allaying it; and it is a better plan in general to administer a large dose at night, and the effect may afterwards be kept up by repeated but smaller doses. The acetate or muriate of morphia in quarter-grain doses may be given at intervals; but I have frequently known half a grain, and even one grain, given at short intervals, in otherwise intractable cases, with good effect; and this has been increased by combining with the morphia half-grain doses of the antimonii pot. tartrat. Dover's powder is another form of similar combination, which often proves a valuable remedy. An occasional change in the anodyne is advisable in those cases which require the daily exhibition of such a remedy. Thus half a grain of muriate or acetate of morphia may be administered at one time, a drachm of tinct. hyoscyami at another, and ten grains of Dover's powder on a third occasion; thus varying the form when the repetition of the same medicine seems to diminish its effect. There are instances in which opium, in any shape, gives no relief in procuring sleep, but, on the contrary, appears to aggravate the insomnia and irritability. In one such case, I found the employment of the hydrocyanic acid attended with the most beneficial effects. Five-drop doses of the diluted acid in camphor julep, at intervals of four hours, were administered to the lady, and gradually procured a calm state of mind, and some refreshing repose. The cannabis indicus, or Indian hemp, has been known frequently to succeed in procuring rest, after the different preparations of opium had failed; the tincture is the best form, and is employed in doses of from twenty to sixty drops. As it is a great object to break the continuance of the sleeplessness, in such cases the continual use of the chloroform vapour will be found valuable. I have had an opportunity of seeing more than one case in which it not only induced sleep, which had previously been absent for four or five nights and days, but the patient on recovering from its effects was found to be quite tractable, and free from violence. I am bound, however, to add, that in some cases in which it has been tried by other practitioners, no beneficial effect was produced.

"As a sedative application, the employment of the *warm* and *tepid bath* has been found of great service in cases of puerperal mania: it allays the great irritability, causes the skin to perform its functions more healthily, tends to restore the secretions to a proper state, and soothes the patient. Iced lotions to the heated scalp may be applied at the same time. Many authors speak most highly of the effects produced on females by the use of such baths, especially when any suppression has occurred. In some cases, the cold bath, the shower-bath, and the practice recommended by Dr. Currie, viz., placing the patient in an empty bath,



and pouring water on the head, have been attended with marked benefit. In all these forms it is better, however, to commence with the water tepid, and gradually to lessen the temperature in the succeeding applications. Numerous instances exist in which the tonic effect of the shower-bath has produced excellent results, but it has been employed at a period some weeks after parturition. When the patient exhibits great watchfulness and inability to sleep, notwithstanding the employment of all sedatives, and this is combined with unusual irritability of manner and quick pulse, the case requires our most anxious attention, and every method possible to allay such excitement should be in succession tried. The room should be darkened, and kept perfectly quiet and cool; the covering on the bed should not be more than is sufficient; a mattress should be substituted for the feather-bed, if the latter be used; and it is most essential that a nurse endowed with good sense and experience should be in attendance."

59. "*Counter-irritation* is sometimes of considerable advantage under such circumstances, and a blister to the spine or dry cupping over that part will sometimes produce excellent effect. Esquirol speaks very favourably of blisters in the later stages of this form of insanity, when applied between the shoulders.

"In the *adynamic* form, attendant upon *undue lactation*, it is especially requisite to avoid any depletion or low diet. Sedatives are as important as in the other cases; and in addition to these, the use of tonics, such as quinine, bitter infusions with the mineral acids, the various preparations of iron, the moderate use of wine and beer, and, if possible, after a time a change to the invigorating breezes of the seaside or a quiet village, will be advisable. One of the best means of lessening the irritability of the brain and the want of sleep, is shaving the head, and a persevering employment of refrigerant lotions to that part."

#### V. GENERAL PARALYSIS OF THE INSANE.

60. "General paralysis," say the Commissioners in Lunacy, "has been almost invariably thought to be hopeless of recovery, and its victims usually perish within two or, at least, three years from the commencement of the disease. . . . Most of the medical officers who have had great experience in the treatment of general paralysis, recommend, especially in the early stages, the use of all those means which are generally adopted with the intent of reducing too great vascular fullness in the head. They advise shaving the head, the application of leeches to the head or neck, cupping-glasses to the neck, repeated blisters on the head or neck, setons in the neck, and the use of mercury and purgative medicines. Patients labouring under general paralysis are well known to be liable to paroxysms which resemble epileptic fits, and which often terminate fatally. In these instances recourse is generally had to topical bleeding by cupping-glasses. [In all cases of general paralysis, even while these depletory measures are being used, a stimulating diet will be found necessary.]

"In the later stages of general paralysis, there is not only a loss of the powers of animal life, locomotion, articulation, and of command over the sphincters, but the tone of the blood-vessels and the vitality of the solid parts are greatly reduced, a great tendency to sloughing, especially over the sacrum, exists, and extensive ulcerations further undermine the strength, and tend to bring on dissolution. To obviate these evils in some degree care is requisite. The use of hydrostatic beds is often resorted to."

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[These Reports will be continued as occasion demands.—Ed.]

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NOTE to § VIII., No. 41, "*Chemical Pathology of the Blood*" (p. 403).—Since writing this Report, we have received Mr Sheppard's "*Observations on the Proximate Cause of Insanity*," London 1844; the perusal of which has increased the surprise we have already expressed (foot-note, p. 403) that Dr. Burnett, in his essay "*Insanity Tested by Science*," &c., London 1848, should appear to imagine himself to be the originator of the theory that insanity may be a disease seated in the blood, and that his work should contain no mention at all of Mr. Sheppard's *earlier* publication on the *same* subject.

## BOOKS RECEIVED.

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1. Practical Observations on Midwifery and Diseases incidental to the Puerperal State. By Drs. McClintock and Hardy. Dublin. pp. 368.
2. Pocket Dispensatory. By John Mayne.
3. The Philosophy of Animated Nature. By Dr. Calvert Holland. pp. 512.
4. British Cholera, its Nature and Causes. By Spencer Thomson, Esq. pp. 110.
5. The Recent Advances in the Physiology of Motion, &c. By Drs. Baly and Kirkes. pp. 132.
6. Insanity Tested by Science. By Dr. Burnett. pp. 106.
7. On Stomach and Renal Diseases. By Dr. Prout. 5th edit. pp. 596.
8. Treatise on Diet and Regimen. By Dr. Robertson. Vol. II, pp. 361.
11. History, Description, and Statistics of the Bloomingdale Asylum for the Insane. By Dr. Pliny Earle. pp. 136.
12. Report of the Pennsylvania Hospital for the Insane, 1847. By Dr. Kirkbride. pp. 46.
13. The Twenty-Seventh Annual Report of the Bloomingdale Asylum. By Dr. Pliny Earle.
14. On Functional Diseases of the Liver, associated with Uterine Derangement. By Dr. Butler Lane. pp. 32. (*In our next*.)
15. An Essay on the Epileptic Form of Puerperal Convulsions. By Joseph Thompson, M. R. C. S. pp. 74. (*In our next*.)
16. Ununited Fracture healed by Subcutaneous Puncture. By James Miller, F. R. C. S. E. pp. 8.
17. Essays on Diseases of the Nervous System. By Dr. Marshall Hall. pp. 71.

### PAMPHLETS AND REPRINTS.

1. Ventilation Illustrated.
2. Treatment of Chronic Inflammation in the Bladder by Injections of Nitrate of Silver. By Dr. McDonnell. pp. 12.
3. The Cholera not to be Arrested by Quarantine. By Dr. Gavin Milroy. pp. 51.
4. Remarks on the Conduct and Duties of Young Physicians. By Dr. Simpson. pp. 23.
5. Microscopic Anatomy. By Mr. Hassall. Parts X., XI., XII.
6. On Inhalation of Chloroform. By Dr. Snow.
7. Answer to the Religious Objections to the Induction of Anæsthesia in Midwifery. By Dr. Simpson. pp. 24.
8. On Foreign Bodies in the Air-Passages. By Dr. Mason Warren. pp. 68.
9. Etherization, with Surgical Remarks. By Dr. John C. Warren. pp. 100.
10. Observations on the Cultivation of Organic Science. By Richard Grainger, F. R. S. pp. 60.

### IN EXCHANGE.

British and Foreign Medico-Chirurgical Review. (Jan. April, 1848.)  
 Dublin Quarterly Journal of Medical Science. (Feb., May.)  
 Monthly Journal and Retrospect of Medical Science. (Jan., Feb., March, April, May, June.)  
 American Journal of the Medical Sciences. (Jan., April.)  
 British American Journal. From Jan.  
 Boston Medical and Surgical Journal. From January.  
 Philadelphia Medical Examiner. From January.  
 Medical Times. From January.  
 Journal of Psychological Medicine. (Jan., April.)  
 British Record of Obstetrical Medicine and Surgery. (*From the commencement*.)  
 Pharmaceutical Journal. (Dec., Jan., Feb., March, April, May, June.)

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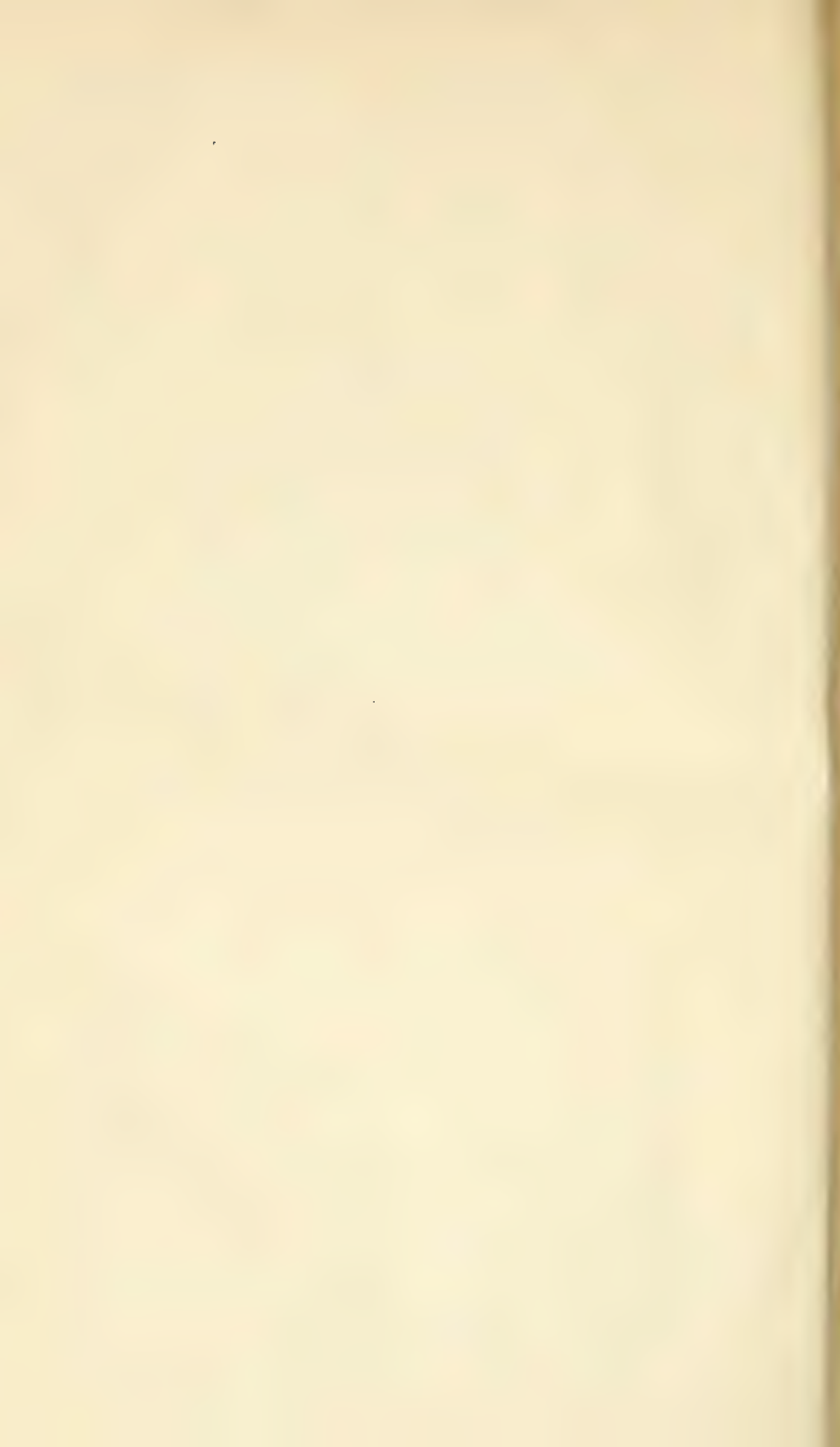


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